

IV. CERTIFICATE OF NEED FOR ACUTE CARE SERVICES

OVERVIEW

This section summarizes the Center's findings regarding certificate of need for hospital and other acute care services. Separate portions are devoted to a discussion of the impact of CON on cost, quality, access and equity. The Center's conclusions regarding this large body of evidence and reasoning about how to interpret it are provided at the end of the section.

IMPACT OF ACUTE CARE CON ON COSTS

Key Informant Survey

The key informant survey for general CON contained four separate questions that were related to costs. We completed a total of 9 interviews; 3 declined and 1 was unavailable after repeated contacts. The final sample included 2 representatives of government, 3 representing payers, 3 representing providers and 1 representing patients/consumers.

Impact on Costs. The first question asked whether CON resulted in a perceptible difference in the size or nature of the hospital industry (those who believed it did have an impact were asked to describe the major effects of CON, whether positive or negative). Overall, 5 respondents (55%) thought that CON had a clear impact in reducing the size of the hospital industry, and 2 others thought that while it did not reduce the size of the industry (given the current excess supply of beds), it did have the desirable effect of constraining the movement of beds away from inner cities (which both believed would otherwise result in shortages in these areas) into suburbs where they were not necessarily needed. One noted that CON also had a positive effect on preserving a nonprofit health sector. Several acknowledged that Michigan already had excess capacity in hospital beds, but claimed that CON kept there from being even more excess capacity in beds.

In contrast, one thought CON had relatively little impact since the economics of health care in areas beyond the scope of CON were far more significant cost drivers than those regulated by CON, while another was certain CON had *no impact* on costs whatsoever (and had no clear purpose). On the contrary, this individual viewed CON as adding to costs by forcing facilities to jump through regulatory hoops while at the same time adding to patient time costs by making certain technologies such as MRI less available in physician offices, thereby forcing them to endure, for example, inconvenient appointments at 3:00 in the morning.

Medicaid Cost Containment Efforts. A follow-up question asked whether dropping CON would influence the pace or nature of Medicaid cost containment efforts. Because CON historically was motivated by concerns about Medicaid spending, our questionnaire gave respondents an opportunity to consider whether lifting CON would affect cost containment efforts. Several respondents noted the difficulty of seeing a direct connection, but most made efforts to speculate about the potential impact. One respondent suggested that CON removal would result in a tightening of Medicaid utilization review activities. It also could lead to access problems for two reasons. First, it would remove the current CON requirement that approved facilities participate in making their services available to Medicaid patients. Second, it likely would lead to a flight of urban hospitals into the suburbs. This latter point was echoed by 3 other respondents, one of whom claimed that up to 4-5 hospitals would make such a move. Another thought the CON removal would encourage the arrival of for-profit hospitals less willing to accept Medicaid patients. One respondent thought that unless Medicaid created its own CON process, the result would be more duplicative, less efficient services. But another disagreed, suggesting that the economics of reimbursement would not encourage an explosion of building facilities or buying equipment.

Changes in Delivery System. A similar question was asked regarding whether dropping CON had any influence (positive or negative) on the rate at which the delivery system might change in future years. One respondent felt strongly that CON removal would have a “salubrious” effect on health system change insofar as the current system is a franchise system favoring hospitals even though health care is moving to the outpatient setting. CON removal is likely to lead to more collaboration/integration rather than less. Another felt that hospitals were combining anyway, so CON removal would not have much effect on horizontal integration; similarly another felt that in light of all the vertical integration already going on, CON removal was not likely to make much difference on such activities. Likewise, three respondents thought CON removal would have little or no effect on HMO penetration and no one offered an alternative to this judgment.

Most others were much less sanguine, speculating that there might be tremendous growth in both inpatient and outpatient facilities (predominantly the latter)—especially those that were physician-owned—with a consequent loss of profitable services in hospitals and negative impact on hospital finances. Several cited the case of Ohio, in which they say a huge increase in for-profit facilities occurred follow CON removal.

Risks of Transition. Another question that evoked cost-related concerns related to the risks associated with immediate versus gradual lifting of CON. Although some indicated they did not know whether there would be any risks, another argued that precisely because no one can accurately predict what would happen, “it can’t possibly be sound public policy,” some of those advocating a gradual approach offered several concerns about moving faster. Some worried about the impact on quality of rapid proliferation of technologies such as ambulatory

surgery, MRIs etc., while others were concerned about what the anticipated proliferation of services would do to health costs. Several respondents thought the “surge” in facilities and resultant duplication would in a few years get disciplined by the market. Still others were worried about the effects of immediate withdrawal of CON on access to care for low income inner city residents, arguing that time was needed for the facilities now serving such patients to adjust to the new situation.

One knowledgeable observer was asked follow-up questions about Blue Cross/Blue Shield's Evidence of Necessity program (EON). EON was created in the mid-1980's, prior to major legislative reforms in the Michigan program, as there were concerns about CON's effectiveness during that period. If CON were no longer on the books, the company might consider resurrecting it even though it is expensive to do. BCBS now pays prices rather than uses cost-based reimbursement, so the focus and justification for such efforts would be on averting inappropriate use rather than trying to cut unit prices.

Literature Review: Impact of Hospital CON on Costs

Most of the available empirical literature on CON relates to the program's impact on costs, whether measured in terms of supply, utilization, prices. Since findings regarding beds, MRI, CT scanners, open heart surgery and cardiac catheterization labs are found in subsequent sections, we focus here only on the “big picture” impact of CON overall or its impact on technologies/services not otherwise addressed later. This review deliberately ignores literature that uses *process* measures to evaluate the effectiveness of CON, i.e., by examining the percent of applications (or dollar value of applications) denied since such evaluations are biased in favor of showing CON is effective. No agency approves all applications and one cannot focus only on the cost savings from applications denied without taking into account the offsetting costs of the process itself in terms of the cost to applicants to get a CON or the delays imposed on the vast majority of projects, which are approved. In addition, such studies do not take into account the compensatory effects induced by CON regulation: if facilities believe that only one piece of equipment will be approved in a geographic area, all might be motivated to apply for a CON in hopes of getting an exclusive franchise. Thus, some of the projects rejected by CON might never have been built anyway if the process were not in place (see Sloan 1988 for further discussion). In addition, because of their many limitations, single-state studies generally have been eliminated from the discussion, as have any analyses, which do not control for other important factors (i.e., are not multivariate studies).

Health Spending. To date, only two other studies have made use of HCFA per capita spending data in assessing the impact of CON. The first such study was based on the older HCFA state per capita spending data (ending in 1982) and therefore did not assess the impact of states which dropped CON. The authors found that after appropriately controlling for the fact that per capita spending was significantly different in states that adopted CON

early (i.e., CON was determined to be endogenous¹), the authors found that CON was associated with a 20.6 percent increase in hospital spending and a 9 percent increase in all other health spending (Lanning, Morrissey and Ohlsfeldt 1991). The net impact is a 13.6 percent increase in per capita health spending. A similar model, using a different method for accounting for the endogeneity of CON and more recent data (through 1990) found no impact of CON on hospital costs per capita (Antel, Ohlsfeldt and Becker 1995), although it is worth noting that this study did find that Section 1122 produced a significant reduction in costs per capita. Our own study using data through 1993 found that mature CON reduced acute care spending by nearly 5 percent over the long term; but we found no statistically significant effect on CON on total health spending per capita, nor did lifting CON show any significant effects on this same measure (Conover and Sloan, 1998). Our analysis further showed that Section 1122 produced a significant reduction in total health spending, acute care spending and physician spending, but *not* hospital spending. A companion analysis reported in Delaware Health Commission (1995) showed that CON stringency had no effects on total or acute spending per capita, while limited CON *increased* hospital per capita spending. Older less sophisticated studies also have found that CON either had no effect (Salkever and Bice 1979; Joskow 1980) or increased (Ashby 1984) hospital spending per capita.

A Federal Trade Commission (FTC) study found that CON had no significant impact on total hospital costs (Sherman 1988), although this study did find that Section 1122 had a significant negative impact. Another study found that CON increased allocative inefficiency in hospitals by roughly 1 percent, meaning that costs were higher than they otherwise would have been, but Section 1122 had no significant effect (Eakin 1991). However, two newer studies, which take into account differences in CON stringency across states have found that CON has had a statistically significant reduction in total hospital costs (Lewin-ICF 1991; 1992). None of these studies account for endogeneity, however. Thus, on balance, the most methodologically sound studies have found that CON has no effect or actually increases both hospital spending per capita and total spending per capita. The weight of the evidence suggests that CON does not affect per capita spending (Table 4.1).

CON and Market Structure. Another way in which CON might affect costs is by influencing market structure, in terms of market penetration of for-profit facilities or HMOs. Although there was theoretical concern that CON might be biased against for-profit facilities, most empirical evidence suggests that for-profit hospital growth is higher under CON (PAI-US 1980) or CON has no measurable impact (Sloan and Steinwald 1980; Wedig, Hassan and Sloan 1987; Mullner and Hadley 1984; Conover and Sloan 1998). Note that while we earlier found that neither young nor mature CON programs significantly affected for-profit hospital

¹Endogeneity simply means that states with higher expenditures were more likely to adopt CON. Therefore, models which examine the impact of CON on spending are biased towards finding no effect (since CON is linked with higher-than-average cost states).

Table 4.1
Empirical Studies of Impact of CON on Health Expenditures and Market Structure

	Number of Studies Showing:		
	Decrease	No Effect	Increase
Health Spending			
Spending per capita	0	1	1
Acute care spending per capita	1	1	0
Hospital expenses per resident	0	6	6
Total hospital costs	2	1	1
Physician expenses per capita	0	1	0
Medicare Spending			
Total per enrollee	0	1	1
Part A per enrollee	0	1	0
Part B per enrollee	1	1	2
Market Structure			
Hospital profits	0	0	1
For-profit share of beds	2	4	1
Public share of beds	1	0	0
Large hospital share of beds	0	0	1
HMO market share	1	2	1
PPO market share	1	0	0

Source: Table C-6.

share, lifting CON was associated with higher for-profit share (Conover and Sloan 1998). Conversely, CON is associated with a lower share of public beds (PAI-US 1980). These findings have been interpreted to mean that chains are more able or willing to invest the resources to get applications through the CON process, whereas public facilities have a more difficult time mustering the necessary resources and/or have more difficulties in overcoming opposition from another public agency. However, authors of another study argue that CON is endogenous, reflecting a response to various interests in a given state. Thus, in states with below average for-profit bed shares, implementation of stringent CON is associated with a further decline in this share (McCarthy and Kass 1983). This makes intuitive sense insofar as CON is associated with negative hospital profits (Sloan 1983) and for-profit facilities generally locate where profits are higher (Noether 1987). A recent analysis shows that CON laws have tended to favor large hospitals, resulting in fewer hospitals with under 100 beds (Santerre and Pepper 2001).

Historically, there has been concern about whether CON has inhibited HMO growth since originally the 1974 federal rules required states to adopt CON review of new institutional services offered by or on behalf of HMOs (Havighurst 1978). This resulted in a great deal of criticism insofar as HMOs did not exhibit the perverse incentives that led to the adoption of CON. Anecdotal evidence indicated that CON sometimes was used in a discriminatory fashion against HMOs (Havighurst 1982) and a later study documented more systematically that 20 to 30 percent of HMOs were denied a CON or saw their projects slowed down substantially by CON review (Brandon and Lee 1984). Unfortunately, there is no good comparative data from non-HMO applicants, so the degree of discrimination, if any, experienced by HMOs is unknown. However, this is somewhat of a moot point now since over

time broader exemptions were given HMO facilities (especially under the 1979 amendments to NHPRDA), so by the mid-1980's, most states had exempted HMO facilities. Therefore, it would be surprising if current CON programs in some way inhibited HMO growth. To date, only two studies have measured the impact of CON on growth in managed care (e.g., HMO market share), both concluding CON had no impact (Lewin-VHI, December 1995; Conover and Sloan, 1998). Companion results reported in Delaware Health Commission (1996) found that "limited" CON programs were associated with lower HMO market share while moderate CON programs were associated with higher HMO shares. Stringent CON programs were associated with lower PPO market shares but had no significant effect on HMO penetration.

Effects of CON Stringency. Some studies measure CON stringency in terms of the number of years it has been in effect (Salkever and Bice 1976). An early study found that CON alone had no effect on unused hospital bed capacity, but that when maturity of CON was taken into account, more mature CON programs achieved a statistically significant reduction in unused capacity (Joskow 1980). Others have distinguished between young and mature programs and whether they were considered "comprehensive" or "non-comprehensive" (Sloan and Steinwald 1980; Sloan 1981; Sloan 1983). One of the most sophisticated attempts to account for differences across various CON programs was unable to detect any influence of CON on hospital investment (PAI-US 1980). Another study examined CON stringency in terms of differences in the capital, equipment and service thresholds used by states, finding that with one exception, tighter thresholds had no statistically significant impact on hospital costs. On the contrary, this study found that doubling the review thresholds in effect in 1984 would have resulted in a 1.4 percent reduction in hospital spending (Sherman, 1988).

Others have argued that stringency cannot be measured in terms of thresholds alone and have developed stringency scores based not only on thresholds, but the scope of CON program coverage as well. Several studies have used this same stringency classification system and using more recent data have typically found that more stringent programs are more effective than less stringent programs across a wide variety of measured cost and utilization impacts (Lewin-ICF 1991; 1992). Another problem concerns endogeneity: if states with higher-than-average costs are more likely to adopt and/or retain CON, then analysis of differences in costs might incorrectly conclude that CON has no impact and/or increases costs. A recent study used a statistical test to demonstrate that CON regulation is endogenous (Lanning et al., 1991). But when the appropriate statistical adjustment was used to correct for this bias, the authors found that CON resulted in a statistically significant *increase* in annual hospital spending (18.5%) and non-hospital costs (8.7%), with a 12.7 percent increase in overall health spending. If applied to Michigan, these figures would imply that CON adds more than \$5.5 billion a year to health spending.²

²This is an illustrative calculation only, as it is based on a single study. A more recent study using similar methods has found that CON produces no statistically significant effect on per capita hospital costs, either positive or negative (Antel, Ohlsfeldt and Becker 1995).

CON and Access to New Technologies. A total of ten studies have explicitly examined the impact of CON on diffusion of technology. If CON has no influence on the rate at which technology diffuses, then presumably no savings due to slower growth in technology can be expected. Most of the studies have examined whether mature CON programs which have been in place for several years perform better than young CON programs or states with no CON whatsoever. In nearly seventy separate tests of the relationship between CON and the rate or extent of technology diffusion, *only one third have found that CON slows the rate of diffusion*, a handful have found that CON *accelerated* diffusion and the lion's share have found no statistically significant relationship (Table 4.2).

Taken at face value, these studies suggest that CON appears to have slowed diffusion of the following technologies:

- Hospital-based cardiac catheterization units (Lewin-ICF 1991)
- Hospital-based CT scanners (Lawthers-Higgins, Taft and Hodgman 1984)
- Hospital-based ambulatory surgical units (Lewin-ICF 1991)
- Organ transplant units (Lewin-ICF 1991)
- Hip arthroplasty (Sloan, Valvona and Perrin 1986)
- Morbid obesity surgery (Sloan, Valvona and Perrin 1986)
- Cobalt therapy (Russell 1979)
- Hemodialysis (Ford and Kaserman, 1993; Caudill, Ford and Kaserman, 1993)³

However, these findings are typically not unambiguous for several reasons: a) results are *conflicting* (e.g., Lewin-ICF 1991 found that CON in general slows diffusion of hospital-based ASCs, but stringent CON accelerates diffusion; Conover and Sloan 1998 found no effect of either young CON, old CON or lifting CON on supply of either hospital-based or total ASCs); b) some of the studies are very *dated* (e.g., Russell, 1979 and Joskow, 1981); c) have *inconsistent* findings (e.g., Russell 1979 found that young CON programs appeared to slow diffusion of cobalt therapy, yet mature CON programs did not); d) *counterintuitive results* (e.g., Sloan, Valvona and Perrin 1986 found no effect of CON on coronary artery bypass graft surgery even though there were explicit federal guidelines regarding this procedure, yet the same analysis shows that CON slowed diffusion of hip arthroplasty); e) *temporary* (e.g., Lawthers-Higgins, Taft and Hodgman 1984 show that CON slowed diffusion of CT scanners in the short-run but had no overall impact on diffusion in the long run); or f) *do not examine the entire system that is relevant* (e.g., Sloan, Valvona and Perrin 1986 examined only surgical procedures done in hospitals even though certain of the procedures studied could be done on an outpatient basis).

³ A related study found that dialysis units in states with CON regulation were less likely than those in non-CON states to use new dialysis technologies ($p < .01$), although the direct effects of CON on overall access to dialysis units appeared minimal (Hirth, Chernow and Orzol 2000). In 1989 (but not 1993) units in CON states also were significantly less likely to adopt technical cost-cutting measures such as staffing/patient.

Table 4.2
Empirical Studies of Impact of CON on Diffusion Rate of New Technology

Type of Technology	CON Impact on Diffusion				
	Any CON	Young CON	Mature CON	Moratorium	Stringent CON
Diagnostic Procedures					
Cardiac Catheterization Units (hospital onl	-	NA	NA	NA	_-***
CT Scan Units					
Hospital-based	_-**	NA	NA	NA	_-***
Number of Total Units	-	NA	- (3) + (1)	-	NA
Percent in Physician Offices	-	NA	-	NA	NA
Diagnostic Radioisotopes	NA	NA	- (4)	NA	NA
Electroencephalography (EEG)	NA	NA	- (4)	NA	NA
MRI Units--Hospital-based only	_-** NS (1)	NA	NA	NA	_-*** (1) NS (3) +* (1)
Surgical Units					
Ambulatory Surgical Units (total)	NA	NA	+	NA	+
Ambulatory Surgical Units (hospital only)	_-**	NA	+	NA	+*** (1) + (1)
Open Heart Surgery Units	_-***	-* (1) - (2)	_-** (2) - (1)	NA	- (1) +*** (1)
Organ Transplant Units	+	+	-	NA	_-*** (1) - (1)
Surgical Procedures					
Cataract Surgery	NA	+*** (1) + (1)	+**	NA	NA
Coronary Artery Bypass Grafts (CABG)	NA	+ (2)	+	NA	NA
Hip Arthroplasty	NA	_-*** (2)	_-***	NA	NA
Morbid Obesity Surgery	NA	- (2)	_-***	NA	NA
Retina Repair	NA	- (2)	-	NA	NA
Alternatives to Surgery					
Inpatient Renal Dialysis Units	NA	-	-	NA	NA
Outpatient Renal Dialysis Units					
Hospital-based	NA	-	-	NA	NA
Non-hospital facilities	_-***	NA	NA	NA	NA
Non-hospital machines	_-*	NA	NA	NA	_-***
Cobalt Therapy	NA	-* (1) -** (1)	- (2)	NA	NA
Other Treatments					
Respiratory Therapy	NA	+ (2)	+	NA	NA
Certified Trauma Centers	NA	NA	-	NA	+
Intensive Care Units					
Speed of Adoption	NA	- (1) + (1)	- (1) + (1)	NA	NA
Percent of Beds in ICU	NA	- (1) + (1)	_-** (2)	NA	NA

Note: Negative sign means that CON has slowed down rate of growth in technology shown relative to states without CON or (in the case of stringent CON) relative to states with less stringent CON. If more than 1 study reported a similar finding, total number of studies is shown in parentheses. "NA" indicates no studies are available. NS means non-significant (direction of effect not reported).

* Relationship shown is significant at .10 level. There is less than a 10% chance that this would be observed by chance.

** Relationship shown is significant at .05 level. There is less than a 5% chance that this would be observed by chance.

*** Relationship shown is significant at .01 level. There is less than a 1% chance that this would be observed by chance.

All told, nearly half of the findings supporting the view that CON slows diffusion are based on looking at hospital-based technology while ignoring diffusion of the same technologies in non-hospital settings. This limitation is by no means trivial. For example, CON appears to

slow the diffusion of hospital-based CT scanners, yet another study which examined growth in the number of scanners in *all* locations, including physician offices, found no significant impact (Lawthers-Higgins et al. 1984).

In several instances CON has been found to *accelerate* diffusion: a) stringent CON is associated with higher growth in ambulatory surgical centers (Lewin-ICF 1991); b) both young and old CON states showed higher rates of diffusion of cataract surgery (Sloan, Valvona and Perrin, 1986); and c) young CON is associated with more rapid diffusion of organ transplant units, although mature CON and lifting CON had no effect (Conover and Sloan, 1998).

The remaining studies found *no* impact of CON on diffusion of a) CAT scanners (Joskow, 1981; Lawthers-Higgins, Taft and Hodgman 1984); b) diagnostic radioisotopes or electroencephalography (Russell, 1979); c) inpatient or outpatient renal dialysis (Russell, 1979); d) respiratory therapy (Russell, 1979); e) the speed of adoption of intensive care units (Russell, 1979); f) coronary artery bypass surgery or retina repair (Sloan, Valvona, Perrin, 1986) and g) open heart units (Conover and Sloan 1998). Another study examined 26 different services and technologies, clustered by type (Cromwell and Kanak, 1982). This study found that CON had no impact on diffusion of *quality-enhancing* technologies (e.g., organ banks); *complexity-expanding* technologies (e.g., ICUs); or *community technologies* (e.g., home care). In short, in some instances CON may contribute to regionalization of some technologies by limiting their diffusion, but *more often than not, CON has no effect on how quickly new technology is absorbed by the market.*

Hospital Ownership and Costs. In theory, CON might have an indirect effect on costs by discouraging entry or expansion of for-profit facilities. Whether this increases or decreases costs depends on whether for-profit facilities are more efficient than other types of facilities. A recent review of the literature on whether for-profit hospitals are more efficient found that overall, “the empirical evidence demonstrates no systematic differences in efficiency between FP and NFP hospitals” (Sloan 2000: 1156). As with the diffusion of technology literature, there have been mixed findings among the dozen or so studies conducted to date. These assessments are complicated by the fact that at least some apparent differences in may merely reflect quality differences of importance to patients. It may be that for-profit facilities are more likely to cater to such tastes, incurring higher costs in the process. We could locate a single study of the impact of ownership on performance of kidney dialysis centers: it showed that FP facilities appear to provide a given level of care more efficiently (Griffiths et al. 1994).

Descriptive Evidence: States That Dropped Acute Care CON

Since 1983, 20 states now have dropped their acute care CON programs. Legislatures in the early states that repealed CON were very concerned about a short-term building surge and roughly half hedged their bets by retaining Section 1122 programs or adopting moratoria on construction (Simpson 1986). Arizona and Utah both experienced large increases in hospital beds, open heart units and nursing home beds in the first few months following CON

removal (Simpson 1986). As described earlier, in the key informant surveys, concern was expressed by some individuals that if CON were removed immediately, there would be the potential for a “surge” in construction of facilities or acquisition of new equipment. Because of these concerns, a more detailed analysis of states which dropped CON was undertaken.

In contrast to bed supply, which is declining anyway, another important area relates to outpatient surgical facilities, which have grown very rapidly in Ohio following CON removal. In a previous study, we had compiled data on both hospital-based ambulatory surgical units (compiled annually by the American Hospital Association) and freestanding facilities (compiled annually by SMG Marketing). We were unable to update this information in this Michigan study, but have provided new comparisons that allow the reader to see how such facilities grew in states that dropped CON during different time periods. There also may be reasons to be concerned about a “surge” in acquisition of new technology, particularly high-tech, high cost equipment or services with a large profit potential. Of the new technology with some theoretical potential for a “surge” in building were CON lifted, Michigan currently regulates eight: a) cardiac catheterization; b) extracorporeal shock wave lithotripsy; c) fixed and mobile magnetic resonance imager services (MRI); d) fixed and mobile computerized tomography (CT) scanner services; e) open heart surgery; f) organ transplant services; g) positron emission tomography (PET); and h) megavoltage radiation therapy. Unfortunately, many of these are technologies that are available on an outpatient basis and there is no easy way of obtaining reliable longitudinal state-level data that could be used in an analysis to determine whether, in the years immediately following the removal of CON, growth in the supply of such services was much higher in states which dropped CON compared to those which retained it.

Three exceptions are open heart units, organ transplant units and certified trauma units, for which the number of facilities, by state, is readily available from the American Hospital Association's Annual Survey of Hospitals. Therefore, this analysis was restricted to these three technologies in hopes that this would be illustrative of what happened to this entire class of technologies more generally. To facilitate comparisons across states, raw data was converted into units per million population: given that the number of patients that can be handled varies by unit, it would have been theoretically preferable to have performed this analysis using either the number of “available slots” or the number of patients actually treated. But such data are not readily available. Moreover, because the figures have been averaged across all facilities to arrive at the statewide total, this limitation is not likely to create a severe bias in the findings. Because of Michigan's interest in MRI, CT and cardiac catheterization, we also examined trends in hospital-based units for these technologies, recognizing that the picture we obtained would be incomplete.

Because there was no way to track the supply of all health facilities and technologies in states which eliminated CON, a second portion of the analysis examined trends in per capita health spending on a) hospitals and b) hospitals and physicians to detect whether a “surge” occurred. This is a much more comprehensive way of looking at the issue since it recognizes

that a “surge” in one particular technology might have been offset by spending reductions elsewhere. What ultimately matters to state policymakers is the net impact of CON on spending. Conversely, even if no “surge” occurred in the six technologies examined, in theory it might have been evident in other technologies which we could not analyze. But if there were a more general, undetected “surge” effect, we would expect to see it in the per capita spending figures. The following summarizes the findings from this analysis, which are reported in more detail in Appendix E.

Overview. We report on trends in beds, MRI/CT units and cardiac services in later sections. Here we focus on facilities/services not addressed elsewhere in our report. For ASCs, we found that states with stringent CON displayed the highest growth rates over the long run, but the shortest annual growth rates in the short run compared to states with moderate or limited CON or any of the groups of states that dropped CON (Table 4.3). There is no consistent pattern when comparing moderate/limited CON states to their counterparts that dropped CON during various periods. However, Michigan shows a decline in relative supply in both the long and short run, possibly reflecting tighter CON controls than in other states.

The growth in open heart units, organ transplant units and certified trauma units generally was lower in stringent CON states and highest for states which dropped CON over the long term, but not for the past five years. In Michigan, growth rates have outpaced those in stringent CON states for all three technologies, but with exception of open heart units, growth has been slower than in the typical state dropping CON. At first glance, it appears that more stringent CON achieves better results than lifting CON. However, as the following analysis shows, few inferences can be drawn just from comparing raw growth rates, since much depends on the *relative* supply conditions. For example, in states with fewer-than-average facilities, we might expect faster-than-average growth as they “catch up” to other states. Conversely, in states with above-average supply, one might expect lower-than-average growth. In much of what follows, this simple story is played out time and again.

Ambulatory Surgical Centers. States with stringent CON historically have maintained a lower-than-average supply of ambulatory surgical centers (ASCs), although the growth of such facilities during the decade for which we have complete data outstripped the national average. Even so, by the year 1993, supply in these states was 27 percent below the U.S. average (Table 4.4). In contrast, during the same period, states with moderate CON went from being slightly above to slightly below the national average, while states with limited CON remained 5 to 9 percent above the average during the entire period.

Table 4.3
Impact of CON Repeal on Growth in Acute Care Facilities

	Ambulatory Surgical Centers	Open Heart Units	Organ Transplant Units	Certified Trauma Units
Period	1983-93	1980-00	1980-00	1986-00
Average Annual Change in Units per Million During Period				
CON in 2001				
Stringent	3.2%	0.9%	0.5%	-0.4%
Moderate	0.4%	1.2%	6.8%	1.6%
Limited	1.7%	1.1%	3.4%	0.6%
Lifted CON				
Before 10/1/86	1.5%	1.6%	1.8%	-1.1%
10/1/86-1989	1.9%	1.9%	1.7%	2.6%
1990 or later	1.1%	1.4%	2.8%	3.7%
Michigan	-0.5%	1.7%	1.3%	0.2%
Average Annual Change in Units per Million, Latest 5 Years				
CON in 2001				
Stringent	1.5%	-1.8%	-0.1%	6.0%
Moderate	-1.3%	-0.4%	0.9%	10.0%
Limited	0.3%	0.1%	-5.8%	9.8%
Lifted CON				
Before 10/1/86	-1.3%	-2.3%	-5.2%	5.4%
10/1/86-1989	-0.5%	0.8%	-2.2%	11.8%
1990 or later	-0.9%	-3.4%	-9.1%	7.0%
Michigan	-0.5%	-1.2%	4.4%	8.3%

Source: AHA and SMG data reported in Tables F-3 (ambulatory surgical facilities), F-3 (open heart units), E-2 (organ transplant units), and E-1 (certified trauma units).

Thus, states that dropped CON early slightly outperform states with moderate or limited CON, whereas states that dropped CON later do somewhat worse than any of the CON groups. But it is also important to note that these states generally had a supply of ambulatory surgical facilities that exceeded the national average well before CON was dropped. Of particular note, the states that dropped CON after 1990 (the first of these did not drop until 1995) already show a far higher supply of ASCs compared to the national average even though CON was in effect in these states during the entire period shown in the table. This suggests that perhaps the states that dropped CON did not have particularly effective programs in the first place, hence their elimination might not be expected to have much impact. This is speculative, however, since we do not have detailed data showing the extent to which any of these states actually regulated ASCs during the period shown. As with hospital beds, Michigan outperformed the average performance of states with limited, moderate or stringent CON.

Table 4.4
Impact of CON Repeal on Growth in Ambulatory Surgical Centers

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Ambulatory Surgical Centers per Million Index (US=100)											
CON in 2001											
Stringent	59.0	58.1	57.2	57.1	61.7	66.1	67.3	68.6	68.6	69.9	73.2
Moderate	105.3	108.0	103.6	101.4	104.0	103.1	100.7	101.9	102.6	103.9	99.4
Limited	114.2	115.5	113.8	115.5	110.7	109.1	111.4	109.5	108.4	110.1	109.8
Lifted CON											
Before 10/1/86	131.8	137.2	137.7	138.4	139.6	140.6	140.0	141.8	138.2	138.1	134.9
10/1/86-1989	151.8	150.7	166.7	171.3	168.1	171.8	170.2	166.3	163.1	161.3	173.0
1990 or later	164.7	172.2	173.7	175.0	181.1	176.6	177.4	173.3	178.1	173.9	170.3
Michigan	96.3	96.8	93.3	88.8	85.5	81.8	84.7	85.3	83.3	84.2	81.3

Source Data on freestanding surgical facilities obtained from SMG Marketing (Table F-1) and were combined with AHA data on outpatient surgical facilities (Table F-2). Freestanding facilities are those which are not physically attached to a hospital, but since 6% of such facilities are hospital-owned, there may be some slight overlap between SMG and AHA data.

Moreover, a closer examination of individual states that dropped CON shows that of the 14 states that had dropped acute care CON by 1993, six experienced no surge (CO, KS, MN, NM, OK, WY). However, all of these were above the U.S. average at the time CON was dropped. Four other states exhibited a "boom-bust" phenomenon (AZ, AR, ID, TX): even though all were at least 10 percent above the U.S. average, the repeal of CON was followed by an initial surge and subsequent retrenchment--in some cases returning to a level of relative supply that matched their pre-repeal position. Finally, four states showed some evidence of a "surge" but two of these (CA and IN) had below average supply of outpatient surgical facilities and even by 1993 had not yet "caught up" with the rest of the states.

Closer examination of the remaining two states shows they are somewhat anomalous. In Utah, for example, relative supply actually declined in the first two years following CON repeal, after which relative supply peaked in 1989 and subsequently returned by 1993 to a level nearly equal to the 1988 level. South Dakota repealed CON at a time when it had three times as many outpatient surgical units as the national average. By 1993, it had nearly four times as many; however, as with Utah, the first year following CON removal showed a slight decline in relative supply, followed by a few boom years and later retrenchment (by 1991, relative supply was back to the pre-repeal level). The greatest jump in relative supply occurred in 1993, eight years after CON was repealed. Although one could argue that a CON program might have been able to avoid this most recent surge in growth, the general pattern does not fit the conventional stereotype of CON repeal unleashing a sudden torrent of new building within a short time following removal of regulation. Moreover, this odd pattern may merely reflect the highly rural nature of both states and therefore not be especially pertinent to Michigan.

The foregoing provides some context for understanding the more recent experience in Ohio, where ASCs grew from 31 in 1995 (prior to lifting CON) to 186 by December 2000

(McBeath, 2001); most of the new facilities are physician-owned.⁴ One-fifth of this growth (30) was related to facilities doing only eye surgery and we have no data to indicate whether this was similar to trends in other states. Moreover, Ohio was 19 percent below the national average in ASC supply in 1993 (the last year for which we have complete data), so “catch-up” explains a small portion of the growth. These two factors alone would have justified a 125 percent increase in supply, but clearly cannot account for the five-fold increase in supply that actually occurred. Moreover, 63 percent of the growth in ASCs occurred in 10 counties that lost hospitals following CON removal (Ohio Department of Health 2001), raising the question of whether this growth contributed to their demise. The question is whether Michigan, were it to deregulate ASCs, would be more likely to follow the example of Ohio or the many other states, including Pennsylvania, that have lifted CON without seeing any surge in ASC building.

Unfortunately, it is not altogether clear from the standpoint of cost containment whether states are better off with higher or lower growth in ambulatory facilities. For example, in just 10 years, starting in 1983, Delaware went from being 27 percent *below* the national average availability of outpatient surgical facilities to 21 percent *above* it by 1993. But this is because the Delaware Health Resources Board had deliberately allowed an expansion in the supply of such facilities since these were perceived as offering a cost-effective alternative to inpatient surgery.

Hospital-Based Technologies. Table 4.5 provides an overview of findings regarding selected hospital-based technologies for which historical information was readily available (further information on hospital-based MRI units and CT scanners may be found in Section VI and information on cardiac catheterization labs and open heart units is reported in Section VII). For organ transplants, most states that lifted CON have seen a decline in their relative supply between 1980 and 2000, whereas the most recent wave of states to drop CON have seen relative supply increase during this period. States with stringent CON have generally held supply below the national average for 2 decades, whereas states with moderate CON have seen their relative supply more than double in the same period. States that lifted CON have generally outperformed states with moderate or limited CON, but not done quite as well as states with stringent CON. Although it has held supply well below the national average during most of this period, by 2000, Michigan’s relative supply was only 4 percent below—i.e., very comparable to the levels observed in the first two waves of states that lifted CON.

Trauma centers show a somewhat different pattern. Stringent CON states have consistently held the supply of such facilities one quarter to one third below the national average. Although not quite as strict, Michigan has followed a somewhat similar pattern, with its year 2000 supply at 30 percent below the U.S. average. States with moderate CON also generally have held supply below the national average, but by year 2000, supply was slightly

⁴ Some of the new facilities were hospital-physician joint ventures, but in other cases, hospitals threatened to revoke staff privileges of physicians who set up competing facilities (McBeath 2001).

Table 4.5
Impact of CON Repeal on Growth in Hospital-Based Technology

CON Status	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000
Organ Transplant Units Per Million Population Index (US=100)											
CON in 2001											
Stringent	103.2	46.3	59.3	54.2	50.0	68.6	62.3	62.2	49.3	100.0	72.6
Moderate	86.1	81.4	89.9	83.8	75.4	72.4	76.8	93.6	167.4	222.5	206.9
Limited	91.9	110.0	128.8	127.0	129.7	108.7	116.9	133.5	117.7	87.6	115.3
Lifted CON											
Before 10/1/86	102.7	96.6	104.4	131.0	133.3	101.9	100.0	100.5	113.5	91.8	94.5
10/1/86-1989	101.8	110.5	109.7	96.1	101.2	127.2	115.6	134.0	86.3	151.4	91.1
1990 or later	104.9	219.7	203.8	138.8	175.1	159.0	165.0	158.3	194.5	68.3	117.3
Michigan	115.4	69.0	62.5	104.9	84.3	67.1	53.1	72.9	77.5	69.5	96.3
Certified Trauma Centers per Million Index (US = 100)											
CON in 2001											
Stringent	NA	NA	NA	74.0	65.6	71.4	69.4	72.0	64.7	69.8	66.2
Moderate	NA	NA	NA	86.7	90.3	103.6	121.8	97.5	91.6	109.3	102.9
Limited	NA	NA	NA	135.9	130.6	127.5	131.5	120.0	129.4	126.2	140.3
Lifted CON											
Before 10/1/86	NA	NA	NA	128.8	122.5	123.3	126.2	121.9	121.0	108.0	104.8
10/1/86-1989	NA	NA	NA	131.3	100.3	62.2	80.4	136.5	139.6	158.0	177.5
1990 or later	NA	NA	NA	130.7	131.9	121.2	122.8	201.2	212.4	197.3	205.6
Michigan	NA	NA	NA	82.7	68.0	80.8	97.6	73.7	69.3	73.7	70.3

Source: AHA data reported in Tables F-3 (open heart units), E-2 (organ transplant units), and E-1 (certified trauma units).

higher. In contrast, states with limited CON have rather consistently had a relative supply 30-40 percent above the national average for 15 years. States that lifted CON also generally had a relative supply that was about 30 percent above the U.S. average in 1986, but subsequent growth patterns diverged sharply. States that dropped early have seen their relative supply drop so that in 2000 it was only 5 percent above average. In contrast, states that dropped later have seen their relative supply grow dramatically to more than 75 percent above average for the middle wave of states and more than 100 percent above average for the last waves of states.

These figures may make it appear that stringent CON is preferable to CON removal as a mechanism to restrain the growth in health services and spending. However, as the following detailed discussion indicates, the truth is sometimes masked by the averages used in Table 4.5.

Organ Transplant Units. Evidence for a “surge” is not any stronger in the case of organ transplant units than it was for ASCs. Among 20 states that dropped acute care CON, 12 had the same or lower relative supply of organ transplant units in 2000 as in 1980 (AZ, AR, CA, MN, NE, NM, ND, OK, SC, TX, UT, WY). Two other states (CO, IN) had an increase in facilities, but still had a supply below the national average in 2000, suggesting a “catch-up” phenomenon. Only four states (ID, KS, LA, WI) demonstrated any sort of “boom-bust” effect, where an initial “surge” in supply was later followed by a reduction. But in two of these cases

(KS, WI) neighboring Iowa (which retained CON) saw a doubling in its relative supply of organ transplant units between 1985-2000—a far worse performance than either state. The remaining two states (OH, PA) showed a steady rise in facilities following CON removal (to 9 and 34 percent above the national average, respectively, by the year 2000), but in both cases, the 2000 level was above the level seen in each state 2-3 years prior to CON being eliminated. In Ohio, the number of solid organ transplant programs evidently remained constant between March 1998 (when such units were deregulated) and December 31, 2000, but bone-marrow transplant programs by one (going from 7 to 8) in the same period (Ohio Department of Health 2001).

Certified Trauma Centers. There also is relatively little evidence for a “surge” in trauma centers since supply declined in most states between 1986 and 2000. Of the 20 states which dropped CON, 13 either matched the national pattern of growth or experienced slower growth than the national average (AZ, AR, CA, ID, IN, KS, MN, NM, ND, OH, PA, SD, UT). Of the remaining states, five (CO, OK, TX, WI, WY) exhibited a modest “boom-bust” cycle and the rest (LA, NE) exhibited more steady growth (note that only one of these states, WI, was among the “boom-bust” states also observed for organ transplant units, suggesting that even when such cycles occur, they do not necessarily occur across-the-board). But again we can find instances where neighboring states (IA, MT) experienced far more explosive growth in their trauma unit supply during the same period despite having retained CON. The apparently “poor” performance of states that most recently dropped CON (discussed earlier and shown in Table 4.3) is driven entirely by North Dakota, whose relative supply is more than 500 percent of the national average. Nebraska is 40 percent above the national average; this is worse, admittedly than its relative in the three years prior to lifting CON (when it hovered around the national average) but actually better than its performance from 1989-1993 under CON. Of most relevance to Michigan, Ohio and Pennsylvania in 2000 had relative supplies of trauma facilities that were respectively 26 and 37 percent *below* the U.S. average in 2000.

Per Capita Spending. The best that can be said about the preceding evidence is that CON removal does not consistently lead to a “surge” in building: more often than not, it does not. Even when it does, one cannot always attribute it to CON removal since often at least one neighboring state with CON experienced an even larger “surge.” In other cases, the “surge” is reversed within a few years by market forces. To determine whether any apparent “surge” in technology was associated with a corresponding “surge” in per capita health spending, we first examined whether there appeared to be any gross differences between states based on how CON is regulated and when it was lifted.

In terms of per capita hospital spending, the rate of growth achieved by states that repealed CON is very similar to that of states with moderate or limited CON states and is only slightly higher than in states with stringent CON (Table 4.6). Michigan has outperformed states with stringent, moderate and limited CON in general over the long term, but has

Table 4.6
Impact of CON Repeal on Growth in Per Capita Health Spending

	Health Spending Per Resident				Medicare Spending/ Enrollee
	Total	Acute Care	Hospital	Physician	
Average Annual Change in Per Capita Spending, 1980-1998					
CON in 2001					
Stringent	8.6%	8.3%	6.8%	10.1%	9.0%
Moderate	8.7%	8.5%	7.3%	9.9%	8.6%
Limited	8.1%	7.9%	7.0%	8.9%	7.9%
Lifted CON					
Before 10/1/86	8.1%	8.1%	7.1%	8.9%	8.6%
10/1/86-1989	7.9%	7.8%	6.9%	8.9%	8.0%
1990 or later	8.3%	8.0%	7.4%	8.8%	8.0%
Michigan	7.4%	7.2%	6.5%	7.6%	7.0%
Average Annual Change in Per Capita Spending, 1993-1998					
CON in 2001					
Stringent	4.3%	4.1%	2.2%	3.9%	6.6%
Moderate	5.5%	5.7%	4.3%	5.2%	7.1%
Limited	4.6%	4.6%	3.1%	4.3%	5.9%
Lifted CON					
Before 10/1/86	4.6%	4.8%	3.4%	4.6%	6.9%
10/1/86-1989	5.1%	5.1%	4.0%	5.0%	6.3%
1990 or later	5.0%	4.8%	4.2%	3.3%	6.5%
Michigan	4.8%	4.7%	4.1%	3.4%	7.4%

Source Data from Centers for Medicare and Medicaid Services reported in Tables C-1, C-2, C-3, C-4 and C-5.

exhibited a growth rate quite comparable to states that lifted CON. In contrast, stringent CON states have a much worse track record of controlling per capita physician spending compared to either states which have dropped CON or those with less stringent programs. States with moderate CON also have worse records on the physician spending side compared to states that lifted CON while states with limited CON merely match the record of states that lifted CON. As a consequence, when we look at acute care per capita health spending growth, we find that states that lifted CON generally outperform states with stringent or moderate CON (a similar story holds if we use Medicare spending per enrollee as the basis for comparison). But because Michigan generally outperforms all groups of states both in the short run and long run in terms of holding down physician spending growth, it also exhibits a better long-term performance record than any of these groups as well in terms of total health spending, although in the short run it is slightly outperformed by states with stringent and limited CON. Although a 1.2 percentage point difference between states with stringent CON and Michigan

may seem small, in a \$40 billion a year health economy, it translates into more than \$500 million a year.⁵

Table 4.7
Impact of CON Repeal on Growth in Acute Care Spending

	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998
Per Capita Hospital Spending Index (US = 100)										
CON in 2001										
Stringent	97.2	96.5	97.2	96.5	99.3	101.3	101.1	102.7	102.3	100.4
Moderate	97.7	96.5	98.2	98.5	99.4	100.1	100.7	102.8	105.8	110.6
Limited	105.6	106.2	106.5	108.6	108.8	109.7	110.2	111.1	113.5	114.2
Lifted CON										
Before 10/1/86	84.2	85.2	86.3	85.7	86.4	87.6	88.3	88.2	88.8	91.7
10/1/86-1989	87.8	89.6	87.7	86.5	86.4	88.1	87.8	87.3	91.3	93.1
1990 or later	104.1	107.7	109.2	109.0	108.1	108.7	110.1	111.5	115.9	120.0
Michigan	108.0	106.4	108.9	108.5	106.1	100.1	97.7	100.6	104.8	106.1
Per Capita Acute Care Spending Index (US = 100)										
CON in 2001										
Stringent	98.3	97.9	100.9	101.8	105.4	107.3	108.4	109.0	108.6	107.3
Moderate	92.3	91.4	92.6	93.8	94.6	95.4	95.9	98.3	100.9	104.7
Limited	104.4	104.8	104.2	105.1	104.1	105.2	105.1	105.6	106.9	107.4
Lifted CON										
1990 or later	98.8	101.4	102.1	102.0	100.7	100.3	101.5	101.9	103.4	104.2
10/1/86-1989	91.5	92.5	91.1	90.1	89.1	89.1	89.0	88.9	90.8	92.4
Before 10/1/86	87.6	88.4	88.4	88.2	88.2	88.5	88.0	88.5	89.4	91.1
Michigan	108.5	106.6	106.2	106.2	102.4	98.0	96.5	97.7	99.7	99.0

Source: Data from Centers for Medicare and Medicaid Services reported in Tables C-2 and C-3.

However, as in examining supply trends, it is important not to rely exclusively on a comparison of growth trends, since what is more important is how states have managed their spending given their initial position. As shown in Table 4.7, all states with CON have allowed their relative hospital per capita spending to increase over time to the point where stringent CON states now match the national average, moderate CON states exceed the average by 10 percent and limited CON states exceed the average by 14 percent. In contrast, the early waves of states dropping CON had hospital costs that were roughly one seventh below the national average in 1980 (well before they dropped CON) and even by 1998 continued to enjoy lower-than-average costs. However, the latest wave of states dropping CON had hospital costs above the national average and by 1998 had let these rise to 20 percent above average.

⁵Michigan spent \$35.6 billion on personal health care in 1998. Even if this grew at the same 4.8% modest rate that the state's per capita health spending grew from 1993-1998, this would amount to \$43 billion in 2002. Given that health cost inflation has escalated significantly during this period, actual spending is likely far higher.

The Center separately examined the eight states (CO, ID, KS, LA, OK, TX, WI, WY) in which a “surge” had been apparent in the analysis of both the organ transplant and trauma units (even if the “surge” was ultimately reversed). In charting per capita hospital spending, the Center found that even though many of these states exceeded the national average in terms of the supply of open heart units or organ transplant units, *in every single case except one (LA)*, these states exhibited lower than average per capita hospital spending in 1998. There was almost no evidence of any surge in per capita hospital spending following the removal of CON. Six states (ID, KS, OK, TX, WI, WY) all exhibited faster-than-average growth in per capita hospital spending following the removal of CON: however, one might interpret this as a “catch-up” phenomenon since each started and ended (in 1998) below the national average. Conversely, Colorado’s spending actually fell somewhat relative to the national average (dropping from about 9 percent below the national average when CON was removed to 13 percent below in 1998). Thus, among these eight states, Louisiana is the *only* one that began (roughly 8%) below the national average in 1980 (it never lifted acute care CON since it never had it) and ended up 16 percent above the national average by 1998. As a comparison, Michigan remained at 7-8 percent above that average in 1980 and 1998.

Finally, the Center examined total per capita spending on acute care services (which includes all spending except nursing home and home health), which showed nearly the identical pattern. However, Michigan’s acute care spending fell from 8 percent above average in 1980 to 1 percent below average by 1998. Thus, its performance in controlling growth was better than states that eliminated CON even though all but six of these states (LA, MN, ND, PA, SD, WI) had lower acute care spending than Michigan in 1998.

Medicare Spending Data. The spending data we have examined do not adjust for cost of living differences across states, nor do they account for border-crossing by state residents or Medicare enrollees who seek care outside their own states. A dataset that avoids these limitations is reported in the *Dartmouth Atlas of Health Care 1998*. In this study, the authors calculated adjusted Medicare reimbursement rates per enrollee for 1997, adjusting for differences across geographic areas in sex, race, age and illness levels of Medicare beneficiaries and further adjusting for regional differences in price. These figures are reported for more than 300 hospital referral regions (HRRs) areas across the U.S. From these data, we were able to calculate a weighted average annual per capita cost (AAPCC) per state. These figures may be interpreted as the average annual amount Medicare would have spent on a “standardized” enrollee if there were no differences in cost of living across areas. That is, actual spending was adjusted upwards in areas that had lower-than-average cost of living and was adjusted downward in areas where the Medicare population was sicker than average. The residual differences effectively represent differences across areas in utilization and medical costs (above and beyond whatever cost of living differences there might be). Thus, a state with higher-than-average utilization and/or higher-than-average medical costs would have a higher-than-average annual cost for its Medicare population.

Table 4.8
Price/Illness Adjusted Medicare Spending, by Stringency of Acute CON Regulation, 1997

	Price/Illness Adjusted AAPCC, 1997	1997 Use/Cost Index		1997 Spending Index	
		U.S. =100	Minneapolis = 100	Total Per Capita	Medicare per Enrollee
United States	5,636	100.0	120.5	100.0	100.0
Michigan	5,080	89.1	111.9	97.6	100.4
All Acute CON States (30)	5,328	92.8	114.8	105.0	95.2
Stringent CON (3)	5,164	89.9	112.5	111.3	103.1
Moderate CON (8)	5,436	95.8	117.2	103.6	95.1
Limited CON (20)	5,309	92.0	114.2	104.6	94.0
All States w/o Acute Care CON (20)	5,467	95.5	117.0	93.0	89.0
Dropped CON Before 10/1/86 (9)	5,474	95.7	117.1	93.8	89.5
Dropped CON 10/1/86-1989 (7)	5,362	93.9	115.7	90.3	85.4
Dropped CON 1990 or later (4)	5,319	92.1	114.3	104.7	90.5
Note	[A]	[B]	[C]		

Notes: Figures for each major grouping represent unweighted averages of figures shown. See Table K-1 for raw data, including details about sources and methods.

- [A] The price-illness adjusted average per capita cost (AAPCC) represents the expected cost of care for a typical Medicare beneficiary in a given geographic area, by eliminating differences in cost of living and differences in severity of illness of the Medicare population.
- [B] Figures shown indicate the percent savings per Medicare enrollee that would be achieved were the state to match the U.S. average price/illness-adjusted AAPCC, i.e., achieving "average" performance.
- [C] Figures shown indicate the percent savings per Medicare enrollee that would be achieved were the state to match the price/illness-adjusted AAPCC in Minneapolis (\$4,478), i.e., the benchmark for "optimal" performance according to the Dartmouth Atlas.

Since the purpose of the Dartmouth Atlas figures was to "benchmark" relative performance across areas, we compared each state's average price/illness adjusted AAPCC to the U.S. average (i.e., an "average" benchmark) and to the average observed in Minneapolis, which the Dartmouth Atlas treated as the "optimal" level of performance observed across 300+ HRRs (since its low level of spending is not associated with any obvious degradation in patient outcomes). Using this standard, states with stringent CON achieve the best relative performance on average, i.e., 10 percent below the U.S. average, but they still exceed what is possible in Minneapolis by 12.5 percent (Table 4.8). In short, these states are performing well, but they still could do better. States with moderate CON performed worst among the states with CON, whereas states with limited CON had spending 8 percent below average. This picture is much different than the one obtained by looking at total health spending per capita figures for the same year, where all three groups consistently exceed the national average. This suggests that at least part of the apparent difference in the health spending figures shown earlier are pure cost of living differences. The Dartmouth Atlas figures have the advantage of being more "pure" comparisons, but the disadvantage is that we do not have these figures over time. If we did, we might discover that states with CON used to have even better performance 20 years ago and that they have "lost ground" since then. Thus, even though the cruder per capita spending figures evidently are not accurate in absolute terms, one still can glean insights in seeing how relative differences change over time. That is, a state that was 20 percent above the average in 1980 and 2000 (even if the "true" difference

Table 4.9
Dartmouth Atlas Medicare Utilization Indicators, Michigan Compared to States that Dropped Acute Care CON, 1999

	States That Dropped Acute Care CON								
	Neighboring States								
	Mich- igan	All States	Prior to 10/1/86	10/1/86- 1989	After 1990	Indiana (1986)	Ohio (1998)	Pennsyl- vania (1996)	Wiscon- sin (1995)
	Index (US = 100)								
Preventative Services	101.6	92.9	92.7	94.0	91.3	84.7	89.8	94.4	99.6
Blood Lipid Testing in Diabetes	83.8	84.3	88.4	82.2	78.6	75.3	73.6	68.7	90.6
Eye Examination in Diabetes	99.2	96.3	97.5	95.6	94.9	88.4	98.1	94.6	95.9
HbgA1c Testing in Diabetes	70.1	104.6	109.0	109.4	86.5	98.2	87.2	67.8	125.6
Mammography in Women 65 and Older	124.8	99.1	96.7	97.4	107.6	94.3	102.5	104.9	115.7
Colon Cancer Screening	125.9	67.6	65.8	66.9	73.1	27.8	69.6	115.3	45.3
Vaccination for Pneumococcal Pneumonia	105.9	105.4	99.0	112.6	107.1	124.2	108.0	115.3	124.5
Supply Sensitive	100.8	91.5	88.0	92.6	97.5	97.8	105.3	107.4	85.1
Hospitalizations for CHF	103.3	86.9	82.8	85.0	99.6	107.5	114.0	121.1	81.5
Acute Care Beds	98.8	105.8	99.0	107.3	118.5	108.3	104.3	105.6	90.6
Medical Hospitalizations	95.8	92.1	89.1	93.9	95.9	101.3	103.3	108.6	82.9
Primary Care Physicians	103.5	92.3	85.6	99.1	95.4	83.1	97.2	100.0	95.2
Medical Specialists	105.6	87.3	87.3	87.0	87.7	82.2	107.9	109.9	90.6
Death having admission to ICU	98.1	84.6	84.0	83.3	88.0	104.4	105.4	99.1	69.7
Surgery	118.5	108.0	107.5	106.8	111.2	103.8	104.0	104.6	104.7
CABG (coronary artery bypass graft)	110.4	101.1	95.1	99.8	117.1	110.6	115.5	116.8	98.2
Lower Extremity Bypass	89.4	75.8	74.3	69.9	89.6	92.9	102.7	100.0	83.5
Mastectomy/Lumpectomy	107.0	111.0	104.2	118.3	113.6	93.6	89.8	100.9	122.0
TURP for BHP	93.7	105.7	108.9	100.2	107.9	103.4	98.0	102.3	98.3
Knee Replacement	113.9	118.9	122.4	113.6	120.6	111.9	110.3	100.0	133.3
Back Surgery	146.5	143.4	133.9	162.4	131.6	109.7	124.8	115.4	114.9
Carotid Endarterectomy	134.5	104.7	109.4	96.6	108.5	118.0	117.4	100.4	89.3
Radical Prostatectomy	152.3	103.2	111.6	93.7	100.9	90.1	73.7	100.9	98.0
End-of-Life	91.4	76.7	74.1	76.9	79.1	97.4	85.2	81.0	67.9
% Deaths Occuring in Hospitals	87.5	81.1	77.5	83.6	84.5	93.8	75.7	81.6	77.7
Average Days in Hospital During L6	107.8	89.1	83.6	90.9	98.1	104.8	93.7	99.7	82.9
Average Medicare Reimbursements for Inpatient Care	108.1	84.8	82.9	86.3	86.4	97.2	93.4	86.3	79.8
% Admitted to ICU During Terminal Hospitalization	106.6	88.2	89.1	86.3	89.5	118.4	99.5	94.6	79.1
% Admitted to ICU During L6	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1
% Spending a week of more in ICU	101.0	79.7	83.7	73.1	82.2	132.9	112.1	87.0	50.7

Note: All figures calculated by authors using 1999 adjusted utilization/outcomes figures reported in *Dartmouth Atlas*. Raw rates were converted to index values based on national averages. Note that for supply sensitive services, surgery and end-of-life care, higher values generally represent worse performance, i.e., evidence of unnecessary or inappropriate care. Conversely, for preventative services, higher values denote better performance, i.e., more prevention.

Source: *Dartmouth Atlas*. See Tables K-2 and K-3 for sources and methods.

was only 5 percent) tells a different story than a state that was 20 percent above average in 1980 and only 5 percent above in 2000 using the same “flawed” measurement.

In any case, states that dropped CON are remarkably similar in having average performance that was 4 percent below average using the Dartmouth Atlas figures but 7 percent below average using the CMS per capita spending figures. Michigan was only 3 percent below average according to the latter figures, but this margin of advantage jumps to 11 percent below average using the more accurate Dartmouth Atlas figures, i.e., equaling the performance of states with stringent CON.

While Michigan performs quite well at the aggregate level in the comparisons just shown, a more fine-grained comparison shows specific areas where performance could be better. The Dartmouth Atlas provides more detailed data on four areas of care: preventative services, supply sensitive services, surgery and end-of-life care (Table 4.9). Although it does not

provide specific benchmarks for each measure examined, generally it can be said that scoring higher on preventative services and lower on the other three categories signifies better performance. The reason is that extensive analysis by the Dartmouth researchers has generally found no evidence that “more is better” in terms of improved patient outcomes (preventative services being the exception to this general rule). While there are specific preventative services where states that dropped CON outperform Michigan, overall in this category, Michigan outperforms the states that dropped acute CON, including neighboring states such as Indiana, Ohio, Pennsylvania, and Wisconsin. In contrast, while Michigan matches the national average on supply sensitive services, states that dropped CON generally beat this average even though Michigan typically “outperformed” these states in terms of holding down supply of acute care beds. Likewise, the states that dropped CON, including Michigan’s neighbors, generally have lower rates of surgery and lower rates for end-of-life care. There are exceptions, to be sure (e.g., Indiana has higher rates of end-of-life care than Michigan), but the general pattern is a useful reminder that a) controlling beds is not necessarily equivalent to controlling use of beds; and b) conclusions drawn from aggregate-level data such as the Medicare spending index do not always play out when one examines the details.

Automobile Manufacturer Health Spending Data. Another set of comparisons we were able to make entailed the use of employee health cost data for automobile manufacturers whose workforce is located in states with and without CON. To facilitate comparisons, we have indexed everything to the average cost observed in Michigan, since that was the common denominator across the data from GM, Daimler-Chrysler and Ford. We were not able to get detailed descriptions of the methodology, but all three sets of figures purport to adjust the data (e.g., for age) so that the figures are comparable across states (see details in Section III, p. 17). As with the Medicare data just reviewed, these comparisons tell a somewhat different story than raw comparisons using the resident health spending and Medicare spending data described earlier. For example the spending data for residents and Medicare eligibles are consistent in showing that New York has higher costs than Michigan, although

Table 4.10
Automobile Manufacturer Employee Relative Health Costs in States with and Without CON

State	CON in 2001	Cost per Resident	Cost per Medicare Eligible	Medicare Use/Cost Index	Cost per Employee			Cost per Ford Employee			
					GM	GM	Daimler-Chrysler	Hospital Inpatient	Hospital Outpatient	MRI	CABG
Year		1998	1998	1997	1998	2001	2000	2000	2000	2000	2000
Index (MI = 100)											
States with CON											
New York	Stringent	130.0	112.3	96.6	81.2	86.7	72.4	NR	NR	NR	NR
Michigan	Moderate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Delaware	Limited	115.0	78.3	106.0	NR	NR	114.2	NR	NR	NR	NR
Kentucky	Limited	100.9	84.3	112.1	NR	NR	NR	106.0	100.0	NR	NR
Missouri	Limited	105.9	98.2	115.2	NR	NR	NR	102.0	95.0	NR	NR
States without CON											
Indiana	LTC Only	99.3	89.7	110.0	108.8	115.9	149.0	118.0	121.0	111.0	139.0
Ohio	LTC Only	104.6	92.8	116.1	98.8	105.9	NR	113.0	121.0	119.0	121.0
Wisconsin	LTC Only	105.2	73.3	87.4	NR	NR	191.4	NR	NR	NR	NR

Source: see Table J-1.

the amount differs (Table 4.10). But the GM and Daimler-Chrysler data consistently show New York to have much lower costs than Michigan. Similarly Indiana has lower costs than Michigan using the resident and Medicare data, but much higher costs than Michigan using any of the data from the 3 auto manufacturers. Thus, the general story these figures seem to tell is that a state with stringent CON has lower costs than Michigan, whereas states with limited CON such as Delaware, Kentucky and Missouri generally tend to have higher costs than Michigan, as do states that dropped CON. The very short trend provided by the GM data is also consistent with that story, as it shows that Indiana and Ohio both increased their spending relative to Michigan by 7 percentage points between 1998 and 2001. However, taken at face value, these same data show New York also gaining 6 percentage points on Michigan during this same period, detracting somewhat from the inference that stringent states do better.

There are other important limitations of these data:

- They do not permit “pre-/post-” comparisons to see what happened before and after CON was lifted. It is conceivable that the higher costs observed in states without CON existed even before they dropped CON; in contrast, our multivariate analysis examines spending over a long enough period to see “pre-/post-” effects of lifting CON;
- They only compare limited populations within a state and may not account for different use patterns in rural areas compared to large urban areas, for example; plants do not represent state averages, but rather the patterns prevalent in the local area. The Dartmouth Atlas data document sizable use variations across communities just within Michigan alone (Center for Evaluative Clinical Sciences 2000)—differences that obviously cannot be attributable to differences in CON regulation; in contrast, our multivariate analysis examines utilization and cost differences across entire states and controls for the following differences not accounted for in the employer data: a) HMO market share; b) per capita income; c) general practitioner share of physicians; d) physician supply; e) population density; and f) service wage levels. All of these are important determinants of health spending;
- The comparisons do not always parallel the Medicare use/cost index; in particular, the Medicare data, which have taken into account cost of living differences, age, race, sex and illness levels, show that Wisconsin has markedly lower costs than Michigan, by a plausible amount, i.e., 13 percent. In contrast, the Daimler-Chrysler data imply that use/costs in Wisconsin are nearly double the levels in Michigan, a differential that seems implausibly high.
- They only compare Michigan with states that retain LTC CON. It is conceivable that comparisons with states that fully lifted CON would be more favorable.

Conclusions. Lifting CON does not inevitably lead to a “surge” in acquisition of new facilities or equipment. For the technologies examined, fewer than half the states experienced a “boom-bust” cycle following removal of CON. In other cases, the building “surge” continues

without being reversed by market forces. But when we examined whether the building surges that do accompany CON removal result in a parallel “surge” in spending, the evidence was extremely weak. In most states that lifted CON, per capita spending on hospital and physician services (relative to the US) has remained below the U.S. average following removal of CON. Adjusted cross-sectional data from Medicare and automobile manufacturers suggest that Michigan compares favorably to states that lifted CON, but without having a longitudinal picture, we cannot tell whether such differences, even if genuine, are related to lack of CON or other factors such as longstanding physician practice patterns.

Multivariate Analysis

As described in Appendix A, the Center undertook an extensive empirical analysis of CON which updated their previous work by using data through 1998 (and sometimes 2000), adding methodological improvements to overcome some of the limitations described earlier. This analysis uses state level data on various measures of hospital utilization, costs, profits and health spending, adjusting for differences among the states in major factors that might influence such cost measures. These include per capita income, wage rates, physician supply, population density and the extent of third party coverage for hospital bills.

Types of Regulation Examined. This new analysis focuses on the effects of lifting CON to understand better what happened to supply, utilization, costs and other variables of interest in the years before and after acute care CON was eliminated. Section 1122 was analyzed separately from CON to determine whether there was an independent effect of this program on costs.

The analysis also took into account various hospital rate regulation, including the Prospective Payment System (PPS) and mandatory prospective payment, which is a form of hospital rate-setting similar to DRGs (the analysis distinguished between states with young (in effect less than 3 years) and old programs. Maryland is the only state remaining with this type of regulation, but it was more important during the 1980's. The analysis also examined the impact of competition on costs, using HMO market share as indicators of the pervasiveness of competitive forces. Our complete results are reported in a paper included in Appendix A.

Results. We found no long term effects of lifting CON on any of our health spending measures, including total spending, acute spending, hospital spending, physician spending and Medicare spending. There were sporadic significant effects in some of the years before and after lifting CON, but these did not persist. Moreover, all such effects were in the direction of CON's elimination having a *negative* impact on health spending rather than resulting in a surge of spending. Thus, the best that can be said is that lifting CON appears to have no permanent effect on health spending and if there is such an effect, it would be in the negative direction.

In contrast, we found that lifting CON resulted in a statistically significant increase in hospital profits over the long run (+1.1%).⁶ Conversely, we found that stringent CON was associated with a 1.4 percent decline in hospital profitability (this is a drop in overall hospital profitability of approximately 24 percent, implying a loss of more than \$200 million annually in Michigan hospitals using the same method describe in the footnote). (Note that results for beds, expenses per adjusted patient day or expenses per adjusted admission are discussed in Section V.). Our finding of an increase in hospital margins attributable to lifting CON is somewhat contradictory of a result in an earlier study showing that in states with mature CON laws, hospitals had prices that were 4 percent higher and expenses that were 3.3 percent higher (Noether 1988). But this earlier study was done with data that preceded the era when states began lifting CON.

We found no long-term impact of lifting CON on the diffusion of any of the 6 hospital-based technologies we examined, including trauma units, open heart units, organ transplant units, MRI units, CT scanners or cardiac catheterization labs. Of equal importance to the “boom-bust” hypothesis, the few statistically significant interim effects we found in the first few years following CON removal were in the negative direction. This is consistent with the earlier descriptive analysis of states that lifted CON, i.e., that the “average” effect of CON removal is not to observe a surge.

Our finding that CON had no impact on technology growth contradicts Russell's 1979 finding that CON slowed diffusion of open heart units (see Table 4.8), although this earlier finding is very dated and the market has changed considerably in the interim. However, it also is at variance with a more recent study conducted for Pennsylvania using data from 1980-1989 showing the CON in general slowed diffusion of both open heart and organ transplant units (Lewin-ICF 1991). The key difference between the Pennsylvania and Michigan studies is that the latter analysis is a state-level analysis which estimates total supply of open heart surgery units per million population, whereas the earlier study is a hospital-level analysis which examines the fraction of hospitals having such units. Thus, there is not *necessarily* a contradiction in these findings (i.e., CON may have no impact on absolute supply while still slowing the percent of hospitals which acquire such units). From the standpoint of policy making, trends in the absolute supply of technology (and whether CON has any influence on supply) would appear to be more important than the share of facilities acquiring a particular technology.

⁶ In our analysis, profits were measured as revenues divided by costs, with the mean profit in our sample being 1.060, i.e., a 6.0% profit rate; the average hospital profit in Michigan in 2000 was 6.6%. Our long-run effect of 1.1% is calculated by dividing the coefficient in Table 4 (Appendix A) by 1 minus .295, which is the coefficient on the lagged dependent variable). This result sounds small, but implies that if Michigan lifted CON, its average profit rate would rise to 7.8%, i.e., an 18% increase in average hospital profits or \$160 million in total additional profits to Michigan hospitals in 2000.

Finally, our analysis showed that lifting CON had no significant effects on either the for-profit share of hospital beds or HMO market share.

CON Stringency. In a parallel analysis, we examined whether our findings would persist once we had taken into account differences in stringency across states. We defined stringency in terms of Lewin-ICF categories described earlier. While limited CON had no significant effects on any of our measures, moderate CON reduced the supply of open heart units by 9.3 percent, but increased organ transplant units by 14.2 percent. Stringent CON was associated with five effects:

- Lower hospital spending per resident (but no detectable effect on total spending per resident)
- Lower Medicare spending per eligible (-1.8%)
- Increased beds per 1,000 (+1.2% in short run)
- Fewer MRI units per million (-19.1% in short run and long run)
- Lower hospital profits (-1.0% in short run; -1.4% in long run)

The finding regarding hospital spending mirrors our 1998 results in terms of mature CON: it was associated with lower hospital spending but this did not lower overall spending, suggesting that any savings on the hospital side were counter-balanced by higher spending elsewhere, e.g., physician spending. While it is interesting that stringent CON lowers hospital spending, it is odd to see that it does so while increasing beds per 1,000 population. Equally puzzling is why total health spending per capita would be unaffected while Medicare spending per enrollee would be lower. Of the two spending measures, Medicare is “cleaner” in that it relies on a more homogenous population. However, this advantage may be offset if the extent of cross-border care seeking is substantially higher among the elderly than among the general population. Moreover, as with the apparent hospital savings observed under CON, whatever Medicare savings result from CON may be dissipated in the form of higher user/costs elsewhere in the health system. Overall, our results suggest that, as far as cost containment is concerned, ending CON should have no adverse consequences on health spending.

IMPACT OF ACUTE CARE CON ON QUALITY

Overview

CON theoretically could *enhance* quality in a variety of ways: a) as a “gatekeeper” to screen quality performance of providers seeking to offer new or expanded services; b) by judging ability to meet quality requirements such as staffing; c) by increasing volume where higher volume is related to better outcomes (“practice makes perfect”); d) by stabilizing markets to avoid proliferation of firms that are professionally unprepared to provide good quality service; e) by inhibiting growth of for-profit providers that may be more likely to offer low quality care. CON theoretically could reduce quality by slowing the diffusion of beneficial

technology, protecting low-quality providers from competition and preventing innovative providers from entering the market (State of Washington, JLARC 1999).

Key Informant Survey

Overall, six respondents (67%) suggested that for services where quality is sensitive to high volume, (angioplasty, cardiac PCI, cardiac services generally, open heart services, radiation therapy and transplants were cited as illustrations by various respondents), CON improved quality by ensuring that well-qualified facilities get the volume/experience they need to ensure high quality. These individuals stated or implied that a free market would result in a proliferation of lower volume facilities, the net result of which would be lower quality overall.

Another respondent thought that hospital quality in general was eroding currently, but that this was not being driven by CON, which at best could only affect quality at the margins. Another conceded that proponents often cited the volume-quality argument, but felt that there was no justification for using CON to achieve this purpose: it would be more straightforward just to set qualification standards for all facilities (e.g., through licensure process). This individual also had some faith in market mechanisms to weed out poor quality, suggesting that too often, physicians appeared to believe they were above the free market enterprise system.

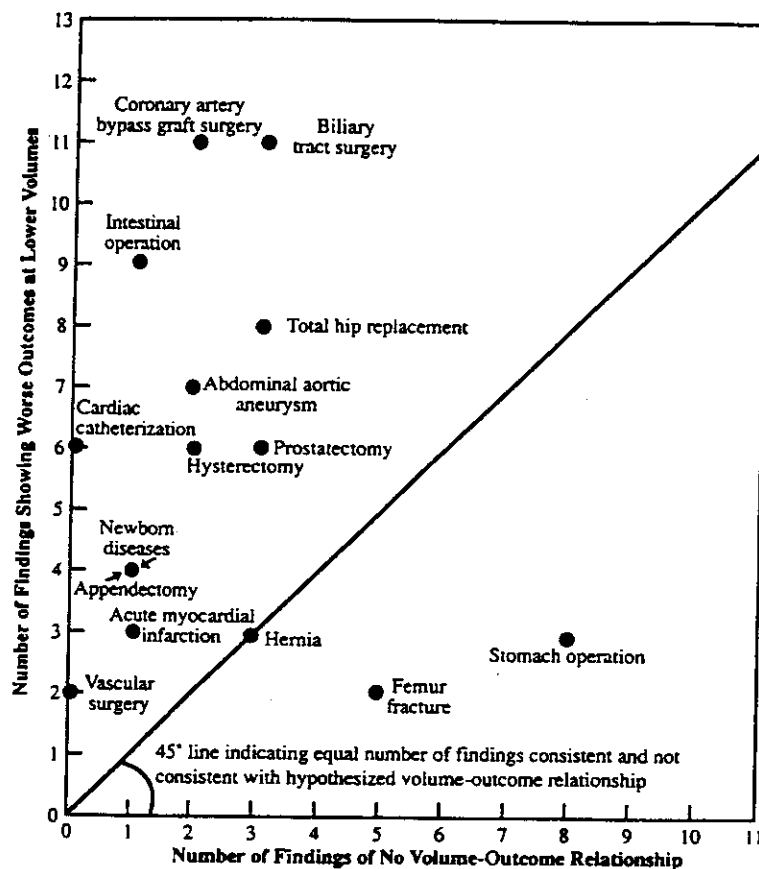
Literature Review: Relationship Between Hospital Volume and Health Outcomes

If a strong linkage between hospital volume and health outcomes can be demonstrated, this implies that CON could have a beneficial effect on quality by promoting regionalization of facilities (thereby ensuring that each approved facility has a sufficient volume of patients to ensure high quality care). The prevailing hypothesis is that "practice makes perfect" and a very large number of studies have been performed to examine this volume/outcome relationship.

Available Studies. Most studies that have been done are limited to hospital stays and therefore focus on care levels provided during hospitalization. Most of these studies use mortality at discharge or mortality within a certain period of time following discharge (e.g., 30 days) to measure whether higher volume facilities have better patient outcomes. However, certain other studies have examined complication rates (e.g., infection rates, rates of re-operation, etc.), excessive lengths of stay or health status to examine this issue. Studies typically rely on data obtained from a) medical records (or collected prospectively as part of a research project); b) routinely collected case abstracts provided by hospitals for all patients; or c) insurance claims data (which though less reliable and clinically rich than medical records data allow patients to be tracked even after they leave the hospital). Luft et al. (1990) and Halm et al. (2000) provide extensive reviews of the literature, upon which we draw for the discussion that follows.

Hospital Volume/Outcome Studies. Several hundred studies have examined whether health outcomes are better in high volume hospitals (all other things being equal). *The vast majority of these studies show higher rates of good outcomes in higher volume facilities* (Fig. 4.1). In roughly one third of the studies, no relationship was found and in less than 10 percent of the studies, higher volume facilities had worse health outcomes. Typically, the studies showing no relationship tend to have smaller sample sizes, so the failure to detect a relationship may merely reflect lack of sufficient patients to reliably detect the expected pattern. In studies showing worse outcomes in high volume facilities, one possible explanation is failure to adequately adjust for differences in severity among patients: if higher volume facilities attract sicker patients, their outcomes would be expected to be worse even if the facility provided better than average quality care to them.

Fig. 4.1
Relationship Between Hospital Volume and Health Outcomes



Source: Luft, Harold S., Deborah W. Garnick, David H. Mark, and Stephen J. McPhee. 1990. *Hospital volume, physician volume, and patient outcomes: assessing the evidence*. Ann Arbor, MI: Health Administration Press.

Physician Volume/Outcome Studies. More than 30 studies have examined whether physicians with high volumes achieve better outcomes. One reason that there have been fewer physician-volume studies is that it is more difficult to obtain physician volume data (especially for physicians with admitting privileges in more than one hospital). Even when such data are available, it is sometimes difficult to identify which physician was principally responsible for a patient where several specialists or consultants were involved in treatment. Fewer than one third of these studies should that high volume physicians have better outcomes: except for one study showing worse outcomes for surgeons performing a large number of coronary artery bypass graft surgeries, the remaining studies find no relationship between volume and outcomes. But again, especially when mortality rates are calculated at the level of the individual physician (where the sheer volume of procedures that can be examined is necessarily limited), many such studies may simply lack the statistical power to confirm the “practice makes perfect” (also called “learning by doing”) hypothesis. One study examined the effects of both hospital and physician volume simultaneously and found that mortality was 50 percent lower among physicians performing a high volume of carotid endarterectomies; however, there was *no* effect of hospital volume (Edwards et al., 1991). Yet other studies have shown better outcomes for high-risk infants in high volume facilities, yet no effect of physician volume on outcomes (LeFevre 1992).

Implications. Collectively, these findings raise many questions: for example, whose practice makes perfect? If high volume hospitals achieve better outcomes, is this simply a reflection that the physicians have higher volumes on average (and therefore more “practice”)? Or instead do high volume facilities achieve superior outcomes because they employ better quality nurses, technicians or management? There is some evidence that specialization rather than volume per se may result in superior outcomes: higher diagnostic diversity in intensive care units results in high mortality (Shortell et al., 1994).

Many studies do not isolate the independent effect of volume, controlling for other important factors. Studies that do typically have found that volume, per se, only explains a small portion of overall differences in quality across hospitals. This implies that if we better understood the process by which facilities achieve superior outcomes, there probably are more direct and potent ways to assure quality through regulation than reliance on CON. For example, one study showed that a policy of channeling high-risk CABG patients away from poor quality hospitals toward those with better quality could lower risk-adjusted mortality by 54 percent (Luft and Romano 1993). Earlier studies have suggested that an appreciable number of excess deaths could be avoided if patients now treated in low volume facilities were instead treated in high volume facilities (Flood, Scott and Ewy 1984; Maerki, Luft and Hunt 1986).

One way to achieve this might be to give consumers better information and let them “vote with their feet.” When New York State began publicizing cardiac surgery mortality rates, by

physician name, the result was a 20 percent decline in mortality between 1989 and 1992 (Hannan et al. 1994). Closer analysis shows that risk-adjusted mortality declined for *all* categories of surgeons (i.e., even those with high volumes), so that the net decline in mortality was a combination of a) the exodus of low-volume surgeons who previously had high mortality rates; b) much better performance of new physicians in the system; and c) improved performance among remaining physicians who did not have low volumes (Hannan et al., 1995).

Among states that dropped CON, Pennsylvania also has a similar reporting system as New York's, though it has not been subject to as much study. The state now a) requires facilities offering selected services to meet nationally recognized standards; b) restricts high risk procedures to certain settings (e.g., cardiac catheterization cannot be done in facilities without coronary care units); and c) establishing volume-quality standards (Nathan 1998). Similarly, in Ohio, as part of CON deregulation, the Department of Health was required to develop regulations establishing safety standards, quality of care standards and quality of care reporting requirements for selected services, including bone marrow transplants, adult cardiac catheterization, open heart, OB/newborn care, pediatric intensive care, pediatric catheterization and cardiovascular surgery. The original plan was to collect and disseminate risk-adjusted data about quality, but the agency is underfunded to provide meaningful report cards, so DOH instead relies on data from the Ohio Hospital Association, Medicare, Medicaid and JCAHO to find outliers that it can investigate in more detail and take action as needed (Nathan, 1998).

Because the mechanisms underlying what is a reasonably well-established *statistical* relationship are not well understood, the implications for CON are not straightforward. Some skeptics have argued that most of the evidence to date is based on observational studies rather than randomized trials, so the findings may reflect differences in severity of illness among patients: when these differences in severity are adjusted for, the magnitude of the volume/outcome relationship typically diminishes (Sowden et al., 1995). An alternative hypothesis that would explain most of the findings to date is that high quality facilities may attract more referrals, hence better quality care leads to high volumes, rather than the reverse. If this is the real explanation behind these findings, then regionalization efforts by CON programs cannot be expected to improve quality.

Moreover, even if we were confident that the relationship goes in the expected direction (i.e., practice makes perfect), these studies do not provide any sort of distinct thresholds that CON programs might use to establish volume standards. That is, *the probability of obtaining better outcomes appears to rise continuously as volume increases*: we cannot say that if a facility drops below a particular number of annual procedures, quality will decline steeply. Of equal importance, even if were unequivocally established that higher volumes produce better outcomes rather than the reverse (and even if the reasons for it were perfectly understood), this would merely establish the theoretical possibility that CON could improve quality. If the

manner in which CON operates in the real world does not result in regionalization (because the process approves all or nearly all applications), then one cannot expect CON to produce volume-related quality improvements. The relatively negative empirical evidence regarding the impact of CON diffusion of technology raises serious questions about whether CON achieves regionalization in actual practice.

Literature Review: Ownership and Quality

A small body of literature compares the quality of care in hospitals and other health facilities based on ownership status. For simplicity, not-for-profit facilities will be denoted NFP, for-profit facilities will be termed FP. A recent review of literature regarding hospital ownership and quality finds mixed results (details in Sloan 2000). These findings may be summarized as follows:

- On structural measures of quality (e.g., national accreditation), ownership makes no difference (Herzlinger and Krasker 1987).
- The most rigorous large-scale national study of hospital quality shows no difference between NFP and FP hospitals using outcome (excess mortality) and explicit process measures, but public hospitals were worse on both (Keeler et al. 1992). FP hospitals had higher quality than NFP or public hospitals using implicit quality measures (i.e., asking physicians if they would send their mother to that hospital).
- Another large national study of 981 hospitals in 1983-84 shows no differences in hospital mortality by ownership (Shortell and Hughes 1988); but a similar analysis using fewer variables found higher mortality in FP hospitals compared to private NFP facilities (Hartz et al. 1989).
- Several different studies examining health outcomes for elderly patients (survival, functional status, cognitive status, and probability of living in a nursing home) found no difference between NFP and FP hospitals, whereas public hospitals had worse outcomes on selected measures (Sloan, Picone et al. 1998; Sloan, Taylor et al. 1998b; Sloan and Taylor 1999).
- A study of psychiatric hospitals using process measures showed FP hospitals had lower quality than NFP on some measures; in addition, in competitive markets, quality appears to improve for NFP hospitals but quality worsened in the face of competition for FP hospitals (Mark 1996).

A more recent meta-analysis of 15 studies in which mortality data were reported; by pooling the estimates across studies and adjusting for potential confounding factors, the authors concluded that private FP hospitals were associated with an increased risk of death for adult patients of 2 percent relative to private NFP hospitals. For infant patients, private FP facilities were associated with a 9.5 percent increase in risk of death (Devereaux, Choi et al., 2002).

In terms of other health facilities, a recent literature review and meta-analysis of 8 studies showed that in 6 of the 8 studies, FP dialysis centers had a statistically significant increase in adjusted mortality rates relative to NFP centers (1 other study showed higher mortality and 1 other showed lower mortality among FP centers, but neither result was statistically significant). By pooling the data across all studies, the authors concluded that FP dialysis centers have on average an 8 percent higher risk of mortality relative to NFP dialysis centers (Devereaux, Shunemann et al. 2002). In other work, FP dialysis centers have been shown to be less likely than NFP to use new technologies, much more likely to adopt technical cost-cutting measures (e.g., staffing per patient) and much more likely to favor patient amenities/convenience (e.g., more stations per patient) (Hirth, Chernow and Orzol 2000). We show later in this section that there is conflicting evidence whether CON encourages or discourages for-profit hospital activity within a state. The weight of current evidence is somewhat in the direction that CON discourages for-profit activity. In light of the mixed evidence cited above, even if we were quite certain that CON discouraged for-profit hospitals from entering or expanding within states with CON, it would be difficult to draw a strong conclusion about whether this would have a positive, negative or neutral effect on hospital quality.

A recent General Accounting Office (GAO) report concluded that for 20 different endoscopic procedures examined, no evidence could be found in the literature or an analysis of Medicare claims of any difference in the safety of gastroenterological and urological endoscopic procedures performed on Medicare beneficiaries in either physicians' offices or health care facilities—including both hospitals and ASCs (GAO, 2002).

Literature Review: Effects of CON on Quality

An early major review of CON and quality reported that while lip-service is often given to quality in discussions about CON, in actual practice, quality was rarely a major factor in the decisionmaking process (Hershey and Robinson 1981). Norton and Christianson (1995) showed in theory how CON regulation can be justified on the basis of learning by doing based on empirical evidence showing that transplant centers with higher volumes experience lower rates of graft failure.

However, only a handful of studies have *directly* measured the impact of CON and other types of regulation on quality. One of the earliest studies examined condition-specific mortality rates among Medicare patients with any of 16 conditions who had received care in one of nearly 1,000 different hospitals (there are 6,500 hospitals nationwide). The study showed that states with more stringent CON or more stringent hospital rate-setting tended to have higher mortality rates (Shortell and Hughes 1988). There is a fierce debate about the methodological adequacy of this study: suffice it to say that the findings are not universally accepted. Theoretically, if CON improves regionalization, the weight of the evidence regarding the hospital volume/outcome relationship implies that mortality should be *lower* under CON. Conceivably, very strict CON programs might result in more nursing home

patients waiting in hospitals for placements, in which case higher mortality may simply reflect sicker patients in these states. However, if this were true, we would expect longer hospital stays in such states, on average: this possibility was tested by the authors and rejected. Alternatively, strict CON programs might constrain the availability of resources for treatment—a hypothesis that the authors accept based on additional empirical analysis.

Unfortunately, no other studies have directly examined the impact of CON on mortality rates. Other studies have found mixed evidence regarding the impact of hospital rate-setting. Another study also found evidence of higher mortality under rate-setting, but there was no indication that the level of cost saving attributable to rate-setting affected mortality (Gaumer et al. 1989). Conversely, a different study showed that hospital rate-setting had *no* impact on hospital mortality (Smith et al. 1993). Because of the paucity of evidence in this area, the Center is reluctant to draw strong conclusions from these studies: at best they raise a cautionary flag about the potential adverse effects of stringent regulation: it is worth noting that none of these studies found that regulation improved health outcomes.

IMPACT OF ACUTE CARE CON ON ACCESS

Our survey included two questions related to access, the first focusing on whether CON affects access for uninsured and disadvantaged populations and the second related to geographic access for the entire population.

Key Informant Survey

Impact on Access to Hospital Care for Uninsured/Disadvantaged. Three respondents (33%) thought that CON improved access to the uninsured and other disadvantaged populations since it prevented for-profit clinics or hospitals from “cream-skimming” (a term volunteered by several respondents) paying patients in low income areas. Another concurred that CON had only a moderating effect on keeping facilities from relocating outside Detroit, but noted that it was not a fair expectation that CON would promote access in any aggressive way since it cannot solicit applications for facilities to be built/located/expanded in areas of particular need for these populations. Another thought it did so only to the extent that CON makes use of comparative review (which reportedly had not been done in practice for years according to this same respondent, and in which case such review would take into account Medicaid patient loads within each applicant's area). One respondent thought CON made no difference in terms of access for these populations (but certainly did not make things worse), while another was uncertain. Another conceded that this was an argument made by CON proponents, but observed that bad debts exist in any business and that it was more appropriate just to recover these by building them into charges rather than relying on CON to deal with this problem.

Impact on Geographic Access. Overall 6 respondents expressed the view that CON had the effect of keeping hospitals from fleeing central cities, which (as indicated earlier)

most viewed positively on grounds that this improved access for uninsured or other disadvantaged populations. None took the view that CON made access worse in central cities and most who explicitly talked about suburban areas seemed to think that in the context of the large excess supply of hospital beds, the dynamic of preventing the inner city hospitals from relocating was not creating any access problems of concern. However, one respondent indicated that part of the problem of CON was that people from Detroit tended to dominate the process, making decisions for other cities such as Grand Rapids whose problems they understood less well. As a general matter, this means that smaller hospitals tend to be deterred from seeking what they need. More specifically, Metropolitan Hospital in Grand Rapids was land-locked and its neighbors refused to contemplate any expansion of its facility; consequently it kept trying repeatedly to work within the CON process to get around a rule that would not allow it to move more than two miles. Ultimately, it was able to get an exemption allowing it to move 10 miles, but only because of a threat to get rid of CON entirely.

Views regarding rural access were a bit more mixed. One respondent indicated that there would always be some geographic disparities, but that a free market system would result in more disparities than under CON, which at least ensures some baseline level of services in both central cities and rural areas. This view was supported by another who suggested that CON probably improved access in rural areas to certain services (such as radiation therapy services) by allowing only units of an economically viable size to exist. Similarly, another suggested that CON forces providers to build services according to where populations were located, not where the money is. Another thought that CON improved geographic access to some extent since its needs formulas attempted to balance access across different areas (similarly, while another indicated he was not completely certain about rural areas, he stated both that he had not heard complaints about this and that the review standards used more lenient thresholds in rural areas that had the effect of permitting greater access). A similar view was expressed by a rural respondent who noted that while there were some complaints about driving times or waiting times, overall CON did a pretty good job of ensuring a reasonably uniform level of access regardless of location.

One respondent indicated uncertainty about CON's effects on rural access while another respondent would not comment since it depends on how one defined what is a "reasonable" distance to get access to various services, but noted that access in rural areas used to be far worse than it is today. Unprompted, this respondent also observed that CON had substantially reduced access to several services for all populations regardless of geography, such as MRI, principally because it is retrospective in nature and does not project needs into the future very well. As well, one of the earlier respondents who thought CON improved geographic access also noted that the process sometimes was too slow to respond to changes in needs/standards with the result that there were temporary access problems faced in all areas.

Literature Review: CON and Uncompensated Hospital Care

The 1974 National Health Planning and Resources Development Act contained several provisions designed to promote better access to care. For example, consumer members were required to outnumber provider members on local planning boards (Sloan 1988). Furthermore, any HSA health systems plan that failed to address the needs of low-income persons in its area was subject to challenge by consumers at the public hearing required before a plan could be adopted.

Economic theory suggests in regulated industries, it is possible to restrict entry to certain lucrative services, such as MRI machines, in order to provide subsidies for services that lose money (Posner 1971). Of course, this could not occur in a completely competitive industry: it could only happen where monopoly pricing provides the profits to permit such cross-subsidization (Sloan 1988). Some states specifically tie CON approval to the applicant's level of charity care (IHPP 1985).

Evidence from CON Decisions. Currently, at least 8 states explicitly consider community benefits or indigent care levels in making CON determinations (Community Catalyst 1999). Only a handful of studies have specifically examined whether the amount of indigent care provided by a facility actually influences CON decisions. Ironically, some of this evidence comes from states that now have eliminated acute care CON:

- CON reportedly was used in Ohio to deny any applications that posed a threat to inner city hospitals that offered more charity care or sometimes explicitly tied to provision of charity care (Lewin-ICF and Alpha Center 1991; Mendelson and Arnold 1993);
- Pennsylvania also gave more favorable review to facilities with marginal applications if they agreed to provide more charity care (Advisory Board 1996).

The most comprehensive analyses have been done for Florida and California. In Florida, a hospital's success in obtaining CON approval from 1983-1989 was consistently found to be related to the amount of indigent care provided (Campbell and Fournier 1993). This finding was extremely robust: the relationship between CON success and indigent care was consistently demonstrated, whether CON success was measured in terms of the number of CON approvals received, the dollar amount of CON projects approved or the likelihood of obtaining CON approval for any given project (with separate tests run for different CON categories such as new beds, bed conversion or new services). The relationship also was consistently visible whether indigent care was measured in terms of a) the absolute dollar amount; b) the hospital's share of all indigent care in its local district; or c) the amount of indigent care per bed. Interviews with policy makers revealed that "hospital regulators had a conscious policy of protecting the interests of hospitals that provide large amounts of indigent care" (p. 914). These findings were further supported by additional analysis in which the authors showed that for nearly 20 percent of applicants, raising indigent care loads by a

hypothetical \$1 million annually would have yielded a higher expected return than leaving these loads unchanged and instead just accepting the lower odds of CON approval (Fournier and Campbell 1996).

A different study of California hospitals for the years 1983 and 1987 also found results compatible with the hypothesis that hospital regulators reward large uncompensated care providers with profitable CON licenses, although no CON variables were actually used in estimating the amount of uncompensated care given by providers (Campbell and Ahern 1993). Thus, it only is very indirect evidence of a possible relationship. Moreover, this study did not include any interviews to confirm whether this was the intent of CON policy makers. Thus, most of the discussion that follows focuses on the Florida study.

Several limitations of these studies must be kept in mind. First, the findings apply only to two states: Florida has the 7th highest uninsured rate in the entire country (19.2%) while California's is the 5th highest (20.3%). This contrasts sharply with Michigan, which has an uninsured rate that is substantially lower (11.2%), the 14th lowest in the country. Second, It should be noted that in the Florida study, the policy to protect high indigent care hospitals from competition was "not widely recognized by outsiders" (p. 921). Third, the study did not account for hospital teaching status, sole community provider status or the high thresholds used for CON review (Hackey 1993).

Moreover, the Florida study controlled for a selected number of important hospital characteristics which may have influenced CON decisions, including size, ownership and measures of the adequacy of services in the local market. However, it did not control for other factors such as teaching status or the degree of competition in the local hospital market. Sloan and Steinwald (1980) have demonstrated that there is no evidence that CON favor teaching hospitals in their decisions. Nevertheless, teaching hospitals may be much more likely than non-teaching facilities to go after the kinds of cutting-edge technologies examined in the Florida study (CT scanners, MRI systems, lithotripsy, cardiac catheterization labs, open heart surgery, etc.). If so, the number and value of CON approvals might have been higher in such facilities simply because they made more frequent application for such services. It is well established that major teaching hospitals are more likely to provide indigent care than other facilities (Sloan, Morrissey and Valvona 1988; Sulvetta and Hadley 1990). Therefore, if teaching status is not taken into account, we cannot be certain whether the higher levels of uncompensated care result from teaching hospitals being more likely to seek CON approval or because there really is an independent effect of regulators rewarding facilities with high uncompensated care loads. On the other hand, such a "spurious correlation" would not account for the higher probability of success in obtaining a CON. It is unclear whether inclusion of other variables would have affected the results.

Finally, the authors of the Florida study specifically cautioned that they were "not advocating a return to CON programs as a method of funding indigent care." In their opinion,

the Florida law gave CON regulators unprecedented power to pursue objectives other than cost control, which the authors argue made it a “badly designed program.” They believe that if the latitude given to regulators is too broad, nothing constrains them from pursuing other social objectives that conflict with cost containment—including anticompetitive motivations. However, the study does serve as a caution that as hospital regulation is removed, the ability and/or incentive for hospitals to provide indigent care may be compromised.

Estimating the Potential Impact of CON on Access in Michigan. The most important limitation of the California and Florida studies is that *neither demonstrates a direct connection between CON activities and actual provision of indigent care*. That is, the Florida study showed that hospitals with high levels of indigent care were more likely to receive CON approval. But even if these findings are accepted at face value, they fall short of demonstrating that CON activities result in or facilitate the provision of uncompensated care. In theory, a CON gives to a hospital surplus revenues that could be used to provide uncompensated care. But how much this actually increases the provision of uncompensated care is unclear from these studies: instead, it must be calculated from other evidence.

Indigent Care in States that Dropped CON. Ten states without acute care CON have no indigent care program to mitigate any potential adverse effects on access to care (CO, ID, IN, LA, NM, ND, PA SD, UT, WY).⁷ Two others have used tobacco taxes to fund modest indigent care programs (AZ, CA). Others use a variety of approaches including: a) using public matching funds to encourage community-based clinics (KS); b) using a hospital pool to redistribute funds from a hospital tax (1.83%) and DSH (OH); c) requiring public hospitals, districts and selected counties to provide indigent care (TX); and d) establishing large-scale subsidized health coverage programs for uninsured individuals not eligible for Medicaid (MN) (IHPP 1996; State of Georgia Division of Health Care Finance and Policy 1996).

The experience of states that nearly dropped CON also is instructive. In the early 1990's, Florida created a Public Medical Assistance Trust Fund (PMATF) to level the playing field across hospitals in hopes of eventually building a competitive market to replace CON. While it never completely eliminated CON, it did substantially deregulate it in 1997 (Nathan 1998). The current PMATF tax rate is 1.5 percent of annual net operating revenues hospitals and 1.0 percent for ASCs, clinical laboratories and diagnostic imaging centers (sections 395.701 and 395.7015 of Florida statutes). Georgia also debated elimination of CON, but never did so: however, CON elimination was strongly supported by the Georgia Medical Association which argued that hospitals benefited from an Indigent Care Trust Fund whereas physicians, who also provided substantial amounts of indigent care, had no similar protection (Nathan 1998). Rhode Island did not drop CON, but relies on licensure to ensure equitable levels of

⁷ Note that some of these rely on the Children's Health Insurance Program (CHIP) or disproportionate share payments (DSH) to help subsidize care for the uninsured; but these mechanisms are available in all states and therefore are not counted as mitigation measures.

uncompensated care across hospitals. Providers must maintain a volume of patient care (measured in patient days) equivalent to the preceding 3 years; this ensures some stability from year-to-year, although in principle, even with this formula, a facility could slowly ratchet down its indigent commitment over time (Nathan 1998). We could find no literature that assessed the success of this approach.

Hospital Ownership and Uncompensated Care. As with costs, CON in theory may have an indirect effect on uncompensated care by discouraging entry of for-profit hospitals. A recent review of the literature (Sloan 2000) on whether for-profit hospitals provide less uncompensated care than other types of facilities shows that the evidence is very mixed:

- Most literature finds that private NFP hospitals provide slightly higher amounts of uncompensated care than FP hospitals (Sloan, Valvona, Mullner 1986; U.S. Prospective Payment Assessment Commission 1996), although the differential for psychiatric facilities appears higher (Schlesinger et al. 1997). Other unpublished studies have found larger differentials, but some of these were conducted to support advocacy efforts by NFP hospitals (see Kuttner 1996). A study of Florida hospitals found that FP and NFP provide significantly less indigent care than public hospitals, but there was no significant difference between FP and NFP hospitals themselves (Fournier and Campbell 1996).
- However, another study has found that when FP and NFP hospitals are located in the same area, they serve the same number of uninsured patients, but FP hospitals tend to locate in areas with more paying patients (Norton and Staiger 1994); this implies that cross-sectional comparisons that fail to take this into account will mistakenly attribute lower uncompensated care loads to ownership rather than location. Likewise, a study of California hospitals that converted from NFP to FP status found that conversion did not result in a significant change in provision of uncompensated care (Young et al. 1997); similar results were found in a statistical analysis of hospital conversions in Tennessee during 1990-1996 and case studies of 10 hospital conversions in North and South Carolina (results reported in Sloan et al. 2000).
- Community characteristics matter. Hospitals in markets with a higher FP market share both provide less uncompensated care and are more likely to adopt admissions policies to discourage uninsured patients (Frank et al., 1990). Likewise, there is some evidence that NFP hospitals provide less uncompensated care in communities where a public hospital is present (Thorpe and Phelps 1991). Frank and Salkever (1991) also have found mixed evidence about whether uncompensated care by other hospitals in a community “crowds out” such care by NFP hospitals. A study of California hospitals showed that in areas with the greatest competition, prices rose less quickly and profitability was lower, resulting in the largest decreases in uncompensated care compared to more concentrated markets (Gruber 1994).

Literature Review: CON and Geographic Access

CON and Geographic Access. An early analysis of CON found that it had no impact in encouraging investment in underserved areas (PAI-US 1980). On the other hand, this study only examined data from 1976, before all states had adopted CON, so whether this finding still holds 2 decades later is unclear. More recent evidence is mixed. Lewin-ICF studies in Ohio and Pennsylvania showed that CON was not a factor in encouraging the development of facilities in rural parts of either state (Lewin-ICF and Alpha Center 1991; Lewin-ICF 1992). Kiel found that the CON process was a burden on some rural hospitals, but ultimately did not affect their ability to form consortia with other providers (Kiel 1993). An assessment based on key informants interviews of states that dropped CON found that in Utah, Ohio and Pennsylvania, no disruption of rural networks resulted from CON removal; however, in Wisconsin, CON repeal resulted in the development of new facilities that began siphoning off patients from rural hospitals (State of Washington, JLARC 1999).

Regionalization and Travel Time. In theory, if CON regionalizes certain services, some patients must travel longer distances to obtain care. If patients are sensitive to time costs and reduce their use of a service because of higher time costs, this will result in diminished access and possible adverse effects on quality. The available evidence shows that time costs do matter for routine care: a ten percent increase in time costs will reduce the number of physician, hospital outpatient department and dental visits by 1 to 10 percent (Morrisey, 1992). A study of Medicare recipients in rural Minnesota showed that if two hospitals are equally attractive, the odds of going to the facility that is 10 extra miles away are 50 percent lower (Adams et al. 1991).

However, time evidently matters less to patients who require major services. The study of rural Medicare residents found that travel distance has no effect on mammography compliance or on surgical rates for coronary artery bypass surgeries (CABG) or total hip replacement (Kreher et al. 1995). Moreover, a Utah study found that, depending on the procedure, rural Medicare residents bypass local facilities for surgery 16 to 77 percent of the time (Kane et al. 1978). Even if regionalization does not diminish demand for services, an important question is whether the added time costs imposed by regionalization would outweigh any efficiency savings resulting from the economies of scale achieved by high volume facilities. One study of regionalization for open heart surgery in a metropolitan area (where regionalization would have added 15 minutes in travel times for a typical patient) found that travel/inconvenience costs would offset only 6 to 9 percent of the overall efficiency gains from regionalization (Finkler 1979). In Michigan, even if regionalization resulted in a one hour increase in travel times for a typical patient, extrapolation from the previous study suggests that this would only offset 24 to 36 percent of the efficiency gains resulting from regionalization.

Moreover, recent evidence suggests that in some cases, regionalization would barely increase travel times for most patients. For example, New York state restricts CABG to regionalized facilities. As a consequence, 60 percent of patients are treated in facilities performing 500 or more procedures a year, compared to only 26 percent of patients in California which is much less regionalized. Yet 82 percent of New York's population lives within 25 miles of a facility equipped to perform CABG, compared to 91 percent in California. Nationally, it has been estimated that if all facilities that perform fewer than 100 procedures were shut down, this would reduce the fraction of the population that is within 25 miles of a CABG facility by only 0.2% (Grumbach et al. 1995).

Descriptive Evidence

We provide descriptive evidence on hospital finances for 1992 and 1999 as well of the results from our empirical analysis to help answer this question.

National figures show that in 1999, states that dropped CON were roughly equivalent to states that retain it in terms of their Medicaid hospital payment levels. That is, overall, for the typical state in each group, Medicaid paid roughly 10-12 percent below costs in 1999 (Table 4.11). However, this is quite a change from 1992, when Medicaid in the typical CON state paid hospitals only 4 percent below costs compared to 12 percent below costs in the typical state that had dropped CON by 2001. Thus, in subsequent years, states with CON became markedly less generous in their Medicaid payments to hospitals whereas states that had dropped (or would drop by 2001) CON became slightly more generous. During this same period, states with CON and states that dropped CON reduced the amount of

Table 4.11
Hospital Payment-to-Cost Ratios, 1992 and 1999

	Hospital Payment-to-Cost Ratios			
	Medicaid		Private Payers	
	1992	1999	1992	1999
	Payments as Percent of Costs			
United States	91.0%	96.7%	131.0%	112.3%
Michigan	93.0%	99.8%	121.0%	106.2%
Acute CON States (31)	96.0%	87.9%	124.7%	110.0%
Stringent CON (3)	96.0%	87.9%	124.7%	110.0%
Moderate CON (8)	96.6%	92.7%	136.7%	126.5%
Limited CON (20)	91.9%	89.2%	135.2%	119.2%
States that Dropped CON	88.3%	90.0%	131.1%	124.7%
Before 10/1/86	96.8%	92.9%	133.5%	126.2%
10/1/86 to 1989	84.0%	85.6%	131.3%	126.7%
1990 or later	85.7%	90.9%	127.3%	117.8%
	Index (US = 100)			
Michigan	102.2	103.2	92.4	94.6
Acute CON States (30)	105.6	93.2	102.7	107.7
Stringent CON (3)	105.5	90.9	95.2	98.0
Moderate CON (8)	106.1	95.8	104.4	112.6
Limited CON (20)	102.5	92.5	103.0	106.6
States that Dropped CON	96.1	92.8	100.5	110.5
Before 10/1/86	106.3	96.1	101.9	112.3
10/1/86 to 1989	92.3	88.6	100.3	112.8
1990 or later	91.5	92.9	99.4	103.7

Note: Figures for for all groups represent unweighted averages of figures shown. See Table G-3 for raw data, including details about sources and methods.

“cost-shifting” experienced by private patients.⁸ In 1992, states with CON collected 25 percent more from private patients than the cost of their care, but by 1999, this had fallen to 10 percent. The “cost shift” in states that dropped CON fell from 31 percent to 25 percent during this same period. Thus, by 1999, states without CON had considerably more ability than states with CON to cover any hospital losses through surpluses obtained from cost-shifting. The opposite was true in 1992. We have no way of saying whether these shifts were in any way related to lifting of CON, but they are not completely consistent with a story that lifting CON results in a market free-for-all that lowers the ability of hospitals to finance uncompensated care. It should be noted that Michigan Medicaid pays hospitals far more generously than the typical state with or without CON.

When we examine the figures more closely, the story becomes more interesting still. If we take private payer surpluses (i.e., the “cost shift”) as a percent of total hospital costs, we see that these surpluses amounted to roughly equivalent shares of hospital spending in states with CON and states that lifted CON, i.e., 12-13% (Table 4.12). But by 1999, this had fallen to below 8 percent in states with CON, compared to 10 percent in states that lifted. Yet both sets of states were very similar in terms of their overall Medicare and Medicaid losses and how these losses changed over time: as a rough approximation, Medicare losses declined during this period and Medicaid losses stayed about the same. What changed the most during this period was the percent of hospital costs attributable to uncompensated care. Uncompensated care in states with CON fell slightly from 5.4% of hospital costs to 5.1% between 1992 and 1999; but in states that lifted CON, uncompensated care *rose* from 3.9% to 5.5%. Thus, whereas states without CON lagged behind states with CON in 1992 in terms of uncompensated loads, the opposite was true by 1999. Again, we cannot attribute what happened to lifting CON, but the figures should provide some reassurance to those who imagine the lifting of CON would inexorably produce a decline in uncompensated care.

One final point is worth making. States with CON used to have some “margin of error” in terms of their uncompensated care loads: that is, the cost shift exceeded the amount needed to cover Medicare, Medicaid and uncompensated care losses by 2.8 percent of hospital costs (shown in Net Private Gains column). By 1999, that margin had shrunk to almost zero. But in states without CON, the cost shift margin in 1999, while lower than it had been in 1992, was identical to the 2.8 percent margin previously enjoyed by states with CON in 1992. This margin implies that in principle, states where CON has been lifted could absorb a 45 percent

⁸ Cost-shifting has a “static” and “dynamic” meaning. The static meaning is simply the observation that the average private patient typically pays more than the estimated actual cost of their care in most hospitals. Hospitals use the surplus revenues that result from this to subsidize various activities, including covering uncompensated care losses as well as revenue shortfalls from other programs such as Medicaid and Medicare. The dynamic meaning implies that hospitals raise their prices to private patients in response to revenue shortfalls. There is only limited evidence of hospital’s having such ability and if they do, it is limited (Morrisey (1992) shows that hospitals at best recover 50 cents of each added dollar of uncompensated care through such dynamic cost-shifting). We use the static definition here.

Table 4.12
Hospital Costs and Financing, 1992 and 1999

Hospital Costs and Financing, 1992 and 1999											
	Gains and Losses as Percentage of Total Hospital Costs										Total Gains/ Losses 1999
	Private Payers		Medicare		Medicaid		Uncompensated		Net Private Gains		
	1992	1999	1992	1999	1992	1999	1992	1999	1992	1999	
United States	12.0%	5.2%	-4.0%	0.4%	-1.0%	-0.4%	-5.0%	-5.4%	2.0%	-0.2%	4.9%
Michigan	9.0	3.1	(4.0)	(0.8)	(1.0)	-	(4.0)	(3.3)	-	(1.0)	5.2
Acute CON States (30)	13.0	7.5	(4.5)	(1.3)	(0.8)	(1.0)	(5.4)	(5.1)	2.7	0.1	5.4
Stringent CON (3)	9.3	4.4	(2.3)	(0.0)	(1.0)	(1.0)	(7.0)	(5.7)	(2.0)	(2.3)	1.9
Moderate CON (8)	13.4	6.9	(5.1)	(1.1)	0.1	(0.9)	(5.6)	(5.2)	2.8	(0.4)	4.9
Limited CON (19)	13.6	8.3	(4.7)	(1.6)	(1.7)	(1.0)	(4.9)	(4.9)	3.8	0.8	6.3
States w/o Acute Care CON	12.4	10.2	(4.8)	(1.7)	(1.5)	(0.9)	(3.9)	(5.5)	2.0	2.2	6.4
Dropped before 10/1/86	13.8	11.1	(4.3)	(1.5)	(0.8)	(0.7)	(4.5)	(6.2)	4.0	2.8	7.0
Dropped 10/1/86 to 1989	12.2	10.6	(4.5)	(1.4)	(1.8)	(1.4)	(3.8)	(5.9)	2.0	1.9	6.1
Dropped 1990 or later	11.0	7.6	(6.0)	(2.5)	(2.0)	(0.6)	(3.3)	(3.1)	-	1.4	5.6

Note: Figures for all groups represent unweighted averages of figures shown. See Table G-4 for raw data, including details about sources and methods.

increase in uncompensated care loads and still have enough patient revenue to cover this loss. The combination of these trends and current safety margin is evidence that removal of CON would not necessarily adversely affect access for the uninsured and underinsured. The limitation of the preceding analysis is that we only have aggregate state-level data, so this only indicates what is happening on average in that state. Were we to “drill down” to the individual hospital level, it’s conceivable there is a darker story underlying these figures.

Consistent with the story just provided, our multivariate analysis showed that lifting CON increases hospital profits by nearly one fifth (18 percent), which would translate into an increased hospital margin of 1.2 percent in Michigan. Given Michigan’s 1999 level of uncompensated care, such a margin in theory could finance a one-third increase in uncompensated care. Conversely, we found that stringent CON was associated with a 24 percent decline in hospital profitability. This would translate to a decline of 1.6 percent in hospital margins in Michigan; in 1999, such a loss would have amounted to half the total spent by hospitals on uncompensated care that year.

IMPACT OF ACUTE CARE CON ON EQUITY

Key Informant Survey

The question regarding the fairness of CON and whether it worked to produce a more level playing field evoked numerous comments. One respondent acknowledged there will always be some bias when humans make judgments, but in comparing across states, this respondent felt that Michigan’s CON was as objective as possible in the sense that if standards are met, a CON is granted. Potentially there is some bias in the setting of standards, but this respondent further noted that Michigan had relatively few legal challenges to its standards because the involvement of many different interest groups resulted in a fairly balanced approach. Another concurred that the process was fair and that the statute allowed for variances that the Commission was able to use to maintain a level playing field. For example, rural areas were given less stringent volume requirements for PET and MRIs since there was less evidence that volume affects quality for these technologies. Two others also

felt the process was very fair because the standards now were written in such a way that much of the subjectivity that existed in the past had been eliminated.

Others conceded that the existing process was biased towards hospitals, but felt this was justifiable: in this view, most of the complaints about unfairness came from specialists wanting to set up specialized facilities outside of hospitals that would allow them to do profitable procedures that would erode the ability of hospitals to cross-subsidize care for uninsured and Medicaid. Another respondent echoed this idea that some complaints about fairness were self-serving, citing the example of free-standing ambulatory surgical centers. Physicians and entrepreneurs have complained that the standards are not fair for them compared to hospitals, but the Commission has considered this concern and in the context of seeing sufficient overall capacity to perform outpatient procedures, sees no merit in building competing capacity right next to hospitals. Another pointed out that any services covered by CON actually apply to both hospitals and freestanding facilities and in that sense, Michigan's program is more fair than in other states where it only applies to hospitals; but this understandably annoys physicians who therefore are precluded from being able to do in Michigan what their colleagues in other states might. This respondent noted that in theory, anyone could challenge a competitor in an area, but that's not the norm in the current system. The process allows for both comparative reviews—in which two or more applicants simultaneously have their applications for a needed service in a given area reviewed, with the more meritorious proposal “winning” the available CON for that service. Michigan has gotten away from comparative reviews some time ago because there were too many legal challenges to them etc.

Two expressed the view that the fairness of the process has deteriorated over time, with one claiming that fairness varied by gubernatorial administration and that the current administration is “at the low end of the scale” as some CONs have been awarded or not for political reasons. This was echoed by another who felt that recently individual hospitals have been allowed to bend the rules that were in place. Overall, this individual felt that the system gave an advantage to the larger teaching hospitals. A third respondent felt the process was completely unfair, with decisions being made by individuals based on the interests they represented (unions were cited as an example) and this individual also felt that the larger hospitals preferred CON because it allowed them to charge more for their services than if more competition existed.

Literature Review: CON and Equity

States with more for-profit hospitals were less likely to adopt CON and more likely to later repeal it (Phillips 1995). There long has been evidence that CON may not be implemented neutrally (see Sloan 1988). The FTC, for example, found that hospitals in Chattanooga, Tennessee had agreed to use CON to challenge entry of new competition and divide markets (Sherman 1988). Other case studies of politicization of the CON process have been reported for North Carolina (Havighurst 1986) and Oklahoma (Consedine, Jekel and Dunaye 1980).

On the other hand, several empirical studies have examined whether CON generally is biased against particular types of facilities.

- *Ownership.* Most of the evidence suggests that CON does not affect ownership patterns one way or the other. One study found no support for the hypothesis that CON agencies discriminate against for-profit hospitals (Sloan and Steinwald 1980). A study of CON decisions in Tennessee found that for-profit hospitals were neither more likely to apply for CONs nor get approved for them relative to other types of ownership (Weingarten 1995). Another (using data for 1976-1982) showed that the for-profit share of hospitals was not related to CON (Wedig, Hassan and Sloan 1987). Yet another study (using data from 1972-1983) found no relationship between restrictive CON programs and growth in chain-owned proprietary beds. Another analysis (for 1963-1976) found that except for states with stringent CON, the rate of growth in proprietary beds was actually higher in states with CON, and the increase in publicly owned beds was correspondingly low (PAI-US 1980). However, as noted earlier, in states with below-average for-profit bed shares stringent CON is associated with a further decline in this share (McCarthy and Kass 1983).
- *Size.* A case study in Massachusetts showed that CON was associated with an increase in aggregate hospital investment among large hospitals (and corresponding reduction in such investment among small hospitals (Howell 1984).
- The above-cited Tennessee study showed that hospitals with 300-499 beds were more likely to receive approval than hospitals with 500 or more beds, a finding that the author found difficult to explain (Weingarten 1995). The same study looked for but was unable to find any statistically significant reduction in the chance of CON approval for facilities in either the under 100 or 100-299 bed hospital categories.
- *Teaching Status.* One national study addressing this found no support for the hypothesis that CON agencies favor teaching hospitals (Sloan and Steinwald 1980), while the Massachusetts case study cited above showed that CON was associated with an increase in aggregate hospital investment among teaching hospitals (and corresponding reduction in such investment among non-teaching hospitals (Howell 1984).

Descriptive Evidence

As shown in Table 4.13, states that lift CON do have more for-profit activity, but they also did so prior to CON being lifted. For-profit activity has increased during the past 15 years in nearly all states, the notable exception being states with stringent CON. Our multivariate analysis showed no significant effects on the for-profit share of beds of either lifting CON or stringent CON.

Although we were unable to get more recent data, Table 4.13 also shows that there is almost no difference between states with moderate or limited CON and repeal-CON states in

Table 4.13
Impact of Hospital CON Repeal on Ownership of Acute Care Facilities

	1983	1985	1987	1989	1991	1993	1995	1997	1999
For-Profit Share of Hospital Beds									
CON in 2001									
Stringent	NA	2%	2%	2%	1%	1%	1%	2%	2%
Moderate	NA	6%	7%	7%	7%	7%	8%	10%	10%
Limited	NA	11%	11%	11%	11%	11%	12%	12%	13%
Lifted CON									
Before 10/1/86	NA	11%	14%	14%	15%	15%	17%	19%	17%
10/1/86-1989	NA	9%	9%	9%	8%	8%	10%	12%	12%
1990 or later	NA	2%	1%	1%	1%	2%	4%	5%	4%
Michigan	NA	0%	0%	1%	0%	0%	0%	0%	1%
Share of Ambulatory Surgical Facilities Which Are Freestanding									
CON in 2001									
Stringent	6%	8%	24%	31%	37%	39%	NA	NA	NA
Moderate	3%	6%	11%	16%	21%	23%	NA	NA	NA
Limited	6%	9%	14%	18%	22%	26%	NA	NA	NA
Lifted CON									
Before 10/1/86	7%	11%	16%	20%	24%	27%	NA	NA	NA
10/1/86-1989	5%	6%	11%	16%	19%	22%	NA	NA	NA
1990 or later	2%	4%	9%	9%	12%	14%	NA	NA	NA
Michigan	1%	7%	9%	16%	18%	19%	NA	NA	NA

Source: AHA and SMG marketing data reported in Tables D-6 and F-4.

terms of the share of ambulatory surgical facilities that are freestanding--a finding confirmed in earlier multivariate analysis as well. Surprisingly, the freestanding share of facilities has grown much faster in states with stringent CON compared to other states. In general, these results seem to indicate that CON is not predictably biased for or against particular types of facilities or ownership types.

ACUTE CARE CON: MEND IT OR END IT?

Potential Improvements in Acute Care CON

The key informants provided a number of suggestions about how to improve the current CON process. The ones cited by the most respondents or which appear most important in terms of improving the process without diminishing its effectiveness are as follows:

- *Hire More Staff.* Three respondents said that there needed to be an increase in the number and proficiency of CON staff, one noting as an example that all financial review positions have been eliminated. As a consequence, commitment, knowledge and awareness of CON by the current staff is low. For example, the 2000 hospital survey results have not yet been released, making it difficult to assess needs when data is absent. With more staff, the Commission would be better prepared to make decisions and the entire process could be expedited. According to several accounts, this problem is not new, going back at least a few years or more.
- *Enforcement of Standards.* One respondent said that an important and valid criticism in the Auditor's Report last spring was that once a CON is approved, there is no process for confirming that the applicants actually live up to volume standards or

other conditions claimed in their applications will be met. This respondent claimed that CON was beginning to look into this issue, but it is unclear what changes if any will be made. He cited the specific example of there being lots of low-volume angioplasty providers, but there is not a good public data system that would allow for informed decisions in this area. For example, now mid-sized hospitals are now seeking to do diagnostic catheterizations (PCI) without having an open heart back-up unit in the event emergency surgery were needed. New York is looking at this, but in contrast to Michigan, has an excellent data system that provides outcomes for CABG and other types of surgical procedures.

- *Improve/Streamline Standard-setting.* One respondent made a point of saying that despite under-staffing, the standards-setting process worked pretty well, another complained that minor changes to standards were way too cumbersome to develop and adopt, requiring 6 months of hearings and other procedural hurdles that are hard-wired into the current statute. Three respondents thought the process of setting standards needed to be made more forward looking and less retroactive so that it better reflected changes in technology, standards of care and changes in population. As well, the program should avoid “always reacting to a crisis.” One specifically criticized the bed need methodology and how service areas were defined, noting that it relied on 3-year-old data and therefore did not adequately account for changes in population growth in selected areas.

Elimination of Acute Care CON

Most key informants (92%) favored retaining acute care CON rather than eliminating it.

CON vs. Market Forces. When asked to consider whether on balance the public is better served by reliance on CON or on market forces to achieve the right balance between costs, quality and access to care, only one respondent indicated a preference for market forces, while 5 unequivocally favored CON. Of those favoring CON, one noted that CON has the effect of leveling what otherwise would be a very uneven playing field while another argued that markets cannot work in health care since consumers do not have enough information.

Among those with ambivalent views, one thought that if Michigan had a highly functional CON system, the state would be better off with CON, but otherwise it's better to choose market forces; this person saw CON as most effective in slowing down technologies that would otherwise explode onto the market (such as lithotripters) and slowing down acquisition until it's easier to see what makes sense in terms of demand and supply. Another indicated it was best to have a mix, which is what the current system represents (since CON addresses only a portion of the universe of health services). Another acknowledged that the arguments for market forces have some validity, but that currently, CON would be better than complete reliance on the market.

Immediate vs. Gradual Removal of CON. Respondents were asked whether, *if* Michigan decided to eliminate CON, it would be best to do so immediately or to gradually phase out CON over time. Respondents were asked to accept this premise even if they disagreed with this as a possible policy direction, but two said either they did not know or did not have strong opinions about this. Another suggested that what mattered more than speed was whether the state first created some sort of mechanism to protect providers who delivered unprofitable services to patients.

Only one believed removal should be done immediately, suggesting that it was hard to see operationally how it could be done gradually. Of the six using a more gradual approach, the suggested time frames ranged from 3 to 5 years or longer and most thought that some sort of monitoring system would be desirable during this period to permit a reversal if it looked as if things were getting out of hand. The rationales for gradual phaseout ranged from concerns about existing shortages of technicians that would be exacerbated if selected types of facilities exploded in number. Mechanisms for undertaking such a phaseout ranged from gradually raising dollar thresholds to examining and dropping selected services one at a time on some sort of priority basis.

Risks Associated with Immediate Removal of CON. Although some indicated they did not know whether there would be any risks, another argued that precisely because no one can accurately predict what would happen, “it can’t possibly be sound public policy some of those advocating a gradual approach offered several concerns about moving faster. Some worried about the impact on quality of rapid proliferation of technologies such as ambulatory surgery, MRIs etc. while others were concerned about what the anticipated proliferation of services would do health costs. Several respondents thought the “surge” in facilities and resultant duplication would in a few years get disciplined by the market. Still others were worried about the effects of immediate withdrawal on access to care for low income inner city residents, arguing that time was needed for the facilities now serving such patients to adjust to the new situation.

One knowledgeable observer was asked follow-up questions about Blue Cross/Blue Shield’s Evidence of Necessity program (EON). EON was created in the mid-1980’s prior to major legislative reforms in the Michigan program as there were concerns about CON’s effectiveness during that period. If CON were no longer on the books, the company might consider resurrecting it even though it is expensive to do. BCBS now pays prices rather than uses cost-based reimbursement, so the focus and justification for such efforts would be on averting inappropriate use rather than trying to cut unit prices.

CONCLUSIONS

The Center concludes that the weight of the available evidence provides little support for continuing acute care CON if the motivation is cost containment. Notwithstanding the oft-stated fears in our key informant interviews about what would happen if CON were lifted, the empirical evidence suggests that lifting CON does not inevitably lead to a surge in acquisition of new facilities or equipment. More importantly, in states that lifted CON, per capita spending on hospital services (relative to the U.S.) has not “exploded” and as of 1998, the majority remained below both the national average (and Michigan) in terms of health spending levels.

Justification for CON therefore must rest on its ability to improve quality or access to care. With respect to *quality*, although the mechanisms continue to be not well understood, there is strong evidence of a connection between volume and quality especially for selected surgical procedures. For this reason, there is good evidence that regionalization of facilities should improve health outcomes. While this establishes that CON might improve quality in theory, the evidence that CON actually achieves regionalization is somewhat weak: in most cases, CON appears not to have affected the rate of diffusion of new technologies. There is mixed evidence in the literature documenting CON’s beneficial effects on quality for selected procedures (although this evidence is stronger today than it was 5 years ago). However, we have reasonably convincing evidence even from skeptics that Michigan’s program has held down the number of MRI units, open heart programs and cardiac catheterization facilities relative to the numbers that would exist if CON were eliminated. In cases where CON has achieved regionalization, the limited evidence available suggests that this should not appreciably diminish patient use of services (i.e., restrict access). Moreover, for some technologies at least, it appears unlikely that the added costs imposed on patients by regionalization (for travel/inconvenience) would outweigh the efficiency savings from scale economies that regionalization achieves. But an open question is whether any quality improvements achieved through CON might be as effectively and more efficiently achieved using an alternative mechanism such as hospital outcomes reporting or quality standards enforced through a licensure process.

There is weaker evidence (and also mixed) regarding CON’s ability to improve access to care: from national evidence, whatever effects it has appear to be relatively small especially in the context of the needs of the state’s 1 million uninsured. There appears to be little question that Michigan’s CON reduces access in suburban areas. But our key informant evidence also paints a much rosier picture of CON’s ability to expand access in inner cities. According to this picture, elimination of CON could culminate in serious financial dislocations for urban hospitals, especially in Detroit, and corresponding difficulties in accessing care for uninsured and other vulnerable populations. But again, one can question whether a franchise system is the most efficient way of amassing the resources needed to provide care for such individuals. A fairer and more transparent mechanism might be some sort of hospital

uncompensated care pool used by Florida and South Carolina to level the playing field across hospitals.

In short, justification for the current CON system in Michigan entails a trade-off in which the state must balance the costs of retaining CON (both in terms of the state's budget as well as the hidden costs imposed by the process on the health system) and lower access for a growing population living in suburban areas against modest potential gains in quality and/or access that conceivably be attained by other means. How much weight to attach to these effects ultimately is a political calculation well beyond the scope or purpose of this report. But in light of the state's fiscal crisis, a useful thought experiment might be to consider whether anyone would propose adopting CON in 2002 if the system were not already in place. In light of the evidence presented, reasonable people are likely to disagree on the answer to this question.

If acute care CON is retained, some improvements worth considering include: a) more staffing; b) enforcement of standards; and c) improve/streamline the standard-setting process so that it is less cumbersome.

The following section reviews the Center's findings regarding CON for hospital beds.

V. CERTIFICATE OF NEED FOR HOSPITAL BEDS

OVERVIEW

This section summarizes the Center's findings regarding certificate of need for hospital beds. Separate portions are devoted to a discussion of the impact of CON on cost, quality, access and equity. The Center's conclusions regarding this body of evidence and reasoning about how to interpret it are provided at the end of the section.

IMPACT OF CON FOR BEDS ON COSTS

Key Informant Survey

The key informant survey for hospital beds contained several questions related to costs. The Center completed 12 interviews; 2 declined to participate. The final sample included no representatives of government, 2 representing payers, 7 representing providers and 3 representing patients/consumers.

Impact on Number/Nature of Hospital Beds. The first question asked whether CON resulted in a perceptible difference in the number or nature of hospital beds available in Michigan hospitals (those who believed it did have an impact were asked to describe the major effects of CON, whether positive or negative). All but one respondent believed CON had prevented proliferation of beds, but there were divergent views on how desirable this was. For example, one criticized the program for not having had any impact on the sizable amount of excess capacity in beds (a different respondent claimed that Michigan had 40-50% too many beds) since there is no CON authority/procedure to de-bed. On the other hand, another thought that the admittedly small reduction in the number of beds that has occurred to date should be attributed to CON insofar as it is designed to force hospital systems to redirect their service lines around their existing infrastructure rather than build new facilities.

Several made the point that the result of CON is that successful institutions are penalized (since they cannot expand capacity) because empty beds are held by neighboring hospitals. Another conceded that it was virtually impossible to add beds in the current system since overall occupancy rates were too low, but also indicated that from the beginning, CON had never been designed to deal with the proper distribution of beds. This view was supported by another who felt that the bed need methodology was flawed in part because it relies on old data, resulting in areas that are theoretically overbedded not getting beds that actually were needed. As an example, one hospital had to close its ER to ambulance traffic as a means of reducing demand for the limited number of beds available. Several respondents reported backlogs in admitting patients from ER's to inpatient beds.

Medicaid Cost Containment Efforts. A follow-up question asked whether dropping CON for beds would influence the pace or nature of Medicaid cost containment efforts. Five respondents thought that dropping CON would have no impact on Medicaid cost containment efforts and another thought the effects would be “minimal.” Four others thought that lifting CON would result in beds being built in areas where Medicaid population typically does not live, resulting in a loss of access (and presumably spending); hence, it is unlikely Medicaid would see a cost explosion, so no change in cost containment policy is likely. Two others, however, cited the same flight to the suburbs, but thought this would have an adverse effect on Medicaid costs. One argued that whereas in the current system employers pay for Medicaid and the uninsured in inner city hospitals, the flight to the suburbs would result in a “firewall” that would allow suburban hospitals to serve higher income customers without their needing to cross-subsidize care for others, leaving urban hospitals forced to rely on higher Medicaid payments in order to remain viable. The other shared this view, but added that due to the resultant access barriers, costs would go up because people would not get timely care (resulting in avoidable hospitalizations) and because of higher inappropriate service use (e.g., ER use).

Changes in Delivery System. A similar question was asked regarding whether dropping CON had any influence (positive or negative) on the rate at which the delivery system might change in future years. The views on how the delivery system would evolve if CON were removed varied widely. Those with negative views made the following observations:

- There would be a negative effect on the delivery system as the volume of new facility construction would go up, but capital would be diverted to only a small number of geographic areas.
- There would be a proliferation of facilities in the suburbs, resulting in the closure of some hospitals elsewhere.
- CON removal would result in more services provided outside of hospitals and there would be more competition among the providers of these services.
- CON removal would accelerate the shift from inpatient to outpatient care without affecting the pace of vertical integration.
- CON removal would result in building more specialty hospitals without any impact on managed care penetration or vertical integration.
- Another characterized vertical integration as a joke, with no evidence that such integration results in improved efficiency; this individual also believed there would be no major impact on the rate of delivery system change resulting from CON removal.
- Without CON, another felt that there would be less incentive to take a systematic approach to health delivery within a community, so the shift would be to individual institutions.
- There will be no major effect of CON removal since 70 percent of patients are in managed care already; this individual thought there would be no effect on vertical integration, but speculated it would lead to more for-profit hospitals. Another also felt

certain that for-profit activity would increase and that “several” new hospitals would be built in addition to a proliferation of ambulatory surgical facilities.

Those who view elimination of CON for beds more positively suggested:

- There would be no impact on the delivery system since the primary focus today is to get patients out as quickly as possible; since payers will not pay for excess use, facilities are unlikely to waste resources building duplicative capacity.
- Another thought the impact would be positive since it would provide the flexibility needed to account for an aging population that will have higher bed use over time.
- There would be an influx of outpatient surgical centers due to the pent-up demand that CON has created; this would be beneficial to Michigan since these facilities cost less (but this individual thought this would be a positive development).

Risks of Transition. Another question that evoked cost-related concerns related to the risks associated with immediate versus gradual lifting of CON. Two respondents saw no risks associated with immediate phaseout of CON (except for long term care, which was not the focus of questioning). These individuals indicated that the market could be counted on to constrain excess growth. One acknowledged that there might be an explosion in use of certain technologies such as MRI/CT scans, but this might be justified (this individual noted that for most products, consumers are not forced to get up in the middle of the night to make use of them). Another acknowledged the risks of “land rush” development that would siphon capital away from certain areas, but was comfortable with letting this shake out in the market.

The various risks associated with immediate withdrawal were variously described by respondents as follows: a) there would be overbuilding of new facilities in the Detroit area, with subsequent adverse consequences on inner city hospitals that now are financially healthy, along with access problems for the indigent and elderly; b) there would be a proliferation of facilities (e.g., boutique open heart clinics) with questionable quality and/or unnecessary services provided (and companion reduction in volume of procedures for existing providers); and c) an influx of for-profit providers who would cream-skim paying patients from facilities with high uncompensated care loads.

One respondent cautioned that if the state were to move in the direction of removing CON, it needed to be consistent in its approach to the health care market, e.g., by removing favorable state financing for hospital loans and letting them compete for capital on a level playing field and not tying the hands of the market with any-willing-provider laws and insurance mandates etc.

Literature Review: Impact of CON for Hospital Beds on Costs

There is a sizable literature that speaks to the question of whether CON affects the number of hospital beds or other aspects of hospital performance. The findings are extremely mixed (Table 5.1).

CON and Hospital Beds/Investment. One of the earliest studies of CON found that CON reduced hospital bed supply, but also led to an increased investment per bed: the result was no net savings in hospital spending overall, simply a diversion of spending away from beds and into other types of capital equipment (Salkever and Bice 1976; 1979). Sloan and Steinwald (1980a) also found a compensatory response to CON regulation, but it took the form of higher labor spending rather than greater investment in other forms of capital.

Table 5.1
Empirical Studies of the Impact of CON on Hospital Bed-Related Costs

	Number of Studies Showing:		
	Decrease	No Effect	Increase
Supply/Utilization			
Hospital capital expenditures	2	5	2
Hospital bed supply	5	4	1
Reserve margins/occupancy	2	1	0
Admissions per 1,000	0	3	0
Admissions per bed	0	1	0
Intensity			
Cost per patient day	2	3	3
Average length of stay	1	2	0
Cost per admission	0	3	8
Resource Mix			
Assets per bed	0	3	1
Labor use per bed	1	2	1

Source: Table C-6.

Furthermore, they found evidence that hospital beds increased by 1.4 percent in anticipation of CON, which supports the hypothesis that CON may have induced compensatory responses by providers that defeated the goal of reducing costs--a finding that has been confirmed in other studies as well (Hellinger 1976; Howell 1984). Other early studies also found that CON increased rather than decreased hospital capital expenditures (Salkever and Bice 1976; 1979; Hellinger 1976), although some have argued that due to the several year lag time involved in hospital capital expenditures and the very early data used in these initial studies, some of these may have been too premature to detect an impact from CON even if one were present (see Howell 1984). Even so, many studies over two decade's time have essentially found the same thing: CON had no detectable effect on bed supply (Eastaugh 1981; Ashby 1984; Lewin-ICF 1995; Conover and Sloan 1998) or hospital capital

spending (PAI-US 1980; Eastaugh 1981; Begley, Schoeman and Traxler 1982; Ashby 1984; Wedig, Hassan and Sloan 1987).

In contrast, four studies have found that CON reduces bed supply (Salkever and Bice 1976; Joskow 1980; Begley, Schoeman and Traxler 1981; Cromwell 1987), while another case study from Tennessee associated reduced bed supply with stringent CON (Mayo and McFarland 1989); only two studies link CON with lower hospital capital expenditures (Lewin-ICF 1991; 1992). These latter two studies also took into account differences across states in the stringency of CON. Joskow (1980) and Graham and Cowling (1997) both find evidence that the number of years CON is in effect has a significant negative effect on reserve margins (which is roughly equivalent to "surplus" beds), which further suggests a constraining effect of CON on bed supply (although Worthington and Piro 1982 found no effect of CON on occupancy rates). Although one might credibly argue from this mixed record that CON possibly does reduce bed supply, it is worth emphasizing that this does not translate into parallel reductions in admissions: indeed, four different studies have been unable to detect any impact of CON on hospital admissions per capita (Worthington and Piro 1982; Ashby 1984; Lewin-ICF 1995; Delaware Health Care Commission 1996) or admissions per bed (Worthington and Piro 1982).

In theory, CON also might have reduced hospital costs by promoting scale economies, by reducing admissions as a result of constraining growth in capacity and by limiting the "medical arms race." There is evidence of scale economies in hospitals, but these are not an important source of variation in costs across hospitals (Sloan 1988). One study calculated that if federal planning guidelines had been followed strictly to eliminate all "excess beds" and all duplication of CT scanners, CABG/cardiac catheterization facilities and therapeutic radiation, the resultant savings would amount to less than 2 percent of all health spending (Schwartz and Joskow, 1980). Likewise, there is evidence that a 1 percent reduction in bed supply results in a 0.4 percent decline in admissions (Ginsburg and Koretz 1983). However, in the studies previously cited, the weight of the evidence does not support the hypothesis that CON has reduced bed supply.

Finally, there is some evidence that nonprice competition (i.e., the "medical arms race") occurred under full retrospective reimbursement for hospital care (Robinson, Garnick and McPhee 1987; Higgins 1989; Arnould et al 1993; Dranove 1993). As a consequence, hospital markets with greater competition had higher hospital costs than those with less competition (Joskow 1980; Luft and Maerki 1984; Farley 1985; Robinson and Luft 1985; Robinson and Luft 1988). However, there is evidence that this is diminishing especially in areas such as California with strong competitive forces (Melnick and Zwanziger 1988; Zwanziger, Melnick and Bamezai 1994). However, even if medical arms race incentives were still in place, CON could diminish nonprice competition only if it were successful in regionalizing facilities. A later section on CON and access suggests that the evidence is not

very good that CON slows diffusion of technology, implying a limited contribution to regionalizing high cost technologies or procedures.

CON and Hospital Intensity. Until recently, no empirical studies had reported reductions in hospital cost per admission or cost per day due to CON. Studies typically have found that CON either increases cost per admission (Sloan and Steinwald 1980a; Farley and Kelly 1985; Noether 1987; Anderson 1989; Lewin-ICF 1991; Antel, Ohsfeldt and Becker 1995; Conover and Sloan 1998) or has no impact (Sloan and Steinwald 1980b; Sloan 1983; Lewin-ICF 1995). One study shows that Section 1122 reduced cost per admission by 7 percent (Noether 1987), while another finds no such impact (Antel, Ohsfeldt and Becker 1995).

CON also has been found to decrease length of stay (Sloan 1983) or have no effect (Ashby 1984; Worthington and Piro 1982). Similarly, studies generally have found that CON either increases cost per day (Sloan and Steinwald 1980a; Antel, Ohsfeldt and Becker 1995) or has no effect (Sloan 1983), but analysis based on more recent data (1980-1989) and taking into account differences across states in CON stringency shows that CON results in lower hospital costs per day (Lewin-ICF 1991; 1992). In contrast, other types of regulation, such as state rate-setting and the Medicare prospective payment system have been shown to produce *reductions* in one or more of these hospital cost measures.

CON and Resource Mix. CON in one study has been shown to result in more capital assets per hospital bed, while in three other studies, it had no effect (Sloan and Steinwald 1980a; Eastaugh 1981; Noether 1987). Other studies have shown that CON increases the amount and cost of labor per bed (Sloan and Steinwald 1980a), yet other studies show no impact (Noether 1987).

Descriptive Evidence: States That Dropped Acute Care CON

Arizona and Utah both experienced large increases in hospital beds in the first few months following CON removal (Simpson 1986). Most states that have lifted CON did so when inpatient use was declining, so the likelihood of observing a "surge" in bed construction in these states is low. That said, even in California, where the forces of competition have been unleashed the most, 35 new hospitals opened up between 1989 and 1992, of which 21 had fewer than 100 beds: most of these were in areas already served by other hospitals (Simpson 1993). Therefore, it was worth examining whether the process of trimming excess hospital beds generally occurred more or less rapidly in states that dropped CON compared to those with more stringent CON.

Overview. A preliminary examination of trends in growth of hospital services shows that in states with stringent CON, beds declined more rapidly than in states which repealed CON both over the long term and during the past five years; in Michigan, bed supply fell even faster than in states with stringent CON (Table 5.2). A different picture emerges when

Table 5.2
Impact of CON Repeal on Growth in Acute Care Facilities

	<u>Short-stay Beds/1,000</u>		<u>Admissions/1,000</u>	
	1983-2000	Last 5 Years	1985-2000	Last 5 Years
Average Annual Change in Supply				
CON in 2001				
Stringent	-2.5%	-2.7%	-1.0%	-0.4%
Moderate	-2.2%	-2.2%	-1.1%	0.1%
Limited	-2.3%	-1.9%	-1.0%	-0.3%
Lifted CON				
Before 10/1/86	-2.1%	-1.6%	-1.2%	0.8%
10/1/86-1989	-1.7%	-1.9%	-1.3%	0.8%
1990 or later	-1.8%	-1.4%	-1.3%	0.5%
Michigan	-2.9%	-3.1%	-1.4%	-0.8%

Source AHA data reported in Tables D-1, D-2.

looking at admissions, however. Over the long term, states that lifted CON on average have outperformed states that retained it, regardless of stringency. However, in recent years, these states have seen increases in admissions whereas states with CON generally have seen admissions continue to drop. Michigan has “outperformed” all six groups of states both in the long run and short run, but the fact that beds are shrinking more quickly than admission rates confirms that there continues to be an “overhang” of beds to be shed.

Trends in Hospital Bed Supply in States That Dropped CON. Generally, states that dropped CON saw their community hospital bed supply decline less rapidly than the rest of the nation. As a consequence, bed supply in the first wave of states to drop CON rose from being six percent below the national average in 1984 to being two percent below by 2000 (Table 5.3). States that dropped CON later were above the national average well before they dropped CON and have gained ten percent points relative to the national average since 1984. In contrast, Michigan lost nine percentage points during the same period, i.e., going from one percent below the national average to ten percent below by 2000.

In analyzing individual states, however, we find that ten kept pace with or saw their bed supply decline faster than the U.S. average between the year before dropping CON and 2000 (AZ, CA, CO, IN, MN, NM, OH, PA, TX, WI). In two states (ID, UT), bed supply fell more slowly than the U.S. average, but these states were below average when CON was lifted (and continue to be in 2000), so there was less market pressure to cut back in such instances. On the other hand, there have been eight states (AR, KS, LA, NE, ND, OK, SD, WY) where bed supply declined more slowly even though average bed supply in these states was above the national average at the time CON was dropped. These are all fairly rural states and in most cases (AK, KS, NE, ND, OK) the gain relative to the national average has

been modest (ten percentage points or less). In the remaining states, the gain has been 20 to 30 percentage points. It is worth re-emphasizing, however, that in all these states, absolute bed supply relative to the population has consistently declined following elimination of CON.

Apart from individual differences among them, the relative performance (as a group) of states that repealed CON was slightly worse than in states with limited, moderate or stringent CON programs. Michigan outperformed the average performance of states with limited, moderate or stringent CON. More detailed evidence has been reported for Ohio, whose bed supply fell by 12 percent in the period between deregulation and December 2000; most of this decline was attributable to the closure of 11 long-standing large hospitals in urban areas (McBeath 2001). Between January 1997 and December 2000, Ohio lost 15 hospitals overall, but gained 15 long term acute care facilities (Ohio Department of Health 2001), suggesting the conversion of at least some of these hospitals. These closures occurred in 10 counties, all but one of which were located in metropolitan statistical areas (MSAs); it is worth noting

Table 5.3
Impact of CON Repeal on Growth in Short-Stay Hospital Bed Supply

	1984	1986	1988	1990	1992	1994	1996	1998	2000
Short-Stay Beds Per 1,000 Population Index (US=100)									
CON in 2001									
Stringent	86.4	83.2	82.3	84.8	87.5	89.3	84.0	84.1	84.2
Moderate	98.5	98.8	97.4	98.2	99.1	98.8	98.9	100.5	100.4
Limited	107.6	103.4	104.6	105.3	106.1	105.3	106.0	107.2	108.8
Lifted CON									
Before 10/1/86	93.8	94.6	95.7	96.5	94.9	94.8	96.4	96.1	98.1
10/1/86-1989	104.9	107.9	108.0	111.1	111.3	110.6	112.4	114.8	115.8
1990 or later	135.7	137.5	139.6	139.5	141.3	143.7	144.1	145.3	147.5
Michigan	99.2	97.9	96.9	98.1	93.1	95.2	92.4	90.6	89.8

Source: AHA data on beds reported in Tables D-1.

that 7 of the 10 experienced population declines between 1990 and 2000 (Ohio Department of Health 2001). During this period, Ohio also lost 13 level I obstetric and newborn services in 9 counties, but most of these were reportedly positive, i.e., resulting from a merger of services that eliminated duplication. However, two of the closures left 2 counties without delivery services; in 1999, the last full year of operation, these 2 services delivered 256 newborns (Ohio Department of Health 2001).

Conclusions. We found no evidence that lifting CON leads to “surge” in building new hospital beds, but states that lifted CON have not seen their bed supply shrink as rapidly as in the nation overall even though many of these states had higher-than-average bed supply well before CON was lifted. The dangers of a “surge” in new hospital bed construction appear remote in Michigan for several reasons: a) nationally, the overall bed supply has

declined for more than two decades; b) as technology advances (including improvements in diagnostic imaging equipment and increasing use of laparoscopic procedures), more care is being shifted to outpatient facilities, so there is no reason not to expect this national decline in demand for inpatient beds to continue or for Michigan to move in the opposite direction; c) current occupancy rates in Michigan hospitals average 50 percent, ranging from below 10 percent (13 facilities) to 85 percent (only two hospitals exceeded 80 percent occupancy in 1999); and d) key informants repeatedly expressed concern that CON did not have any mechanism for shedding the many excess beds in the system.

Multivariate Analysis

In our empirical analysis, we found that lifting CON resulted in a statistically significant reduction in beds per 1,000 population (-1.1%). If applied to Michigan, this would imply that the state has roughly 300 more beds than it would without CON. However, we found no corresponding effects on expenses per adjusted patient day or expenses per adjusted admission.

IMPACT OF CON FOR BEDS ON QUALITY

Key Informant Survey

Four respondents thought CON for hospital beds had no impact on quality, although several of these pointed out they did believe CON potentially could improve quality for procedures where a volume-quality effect had been demonstrated. One of these skeptics noted that CON never looks retrospectively at quality anyway, so it does not make a difference especially since hospitals have an incentive to police their own quality anyway. This same individual noted, however, that self-policing may not work on outpatient side since competition there is more driven by the bottom line (in contrast to inpatient side where all the players are not-for-profit), so in theory CON could have a beneficial effect in that area.

Another 3 respondents thought CON had a positive effect on quality, but appeared implicitly to be alluding to CON review of technologies rather than beds since all of them also cited the volume-quality effect as justification for their belief. An additional respondent expressed uncertainty, but noted that some major payers such as Ford and Chrysler believe that CON has a positive effect on quality. Only 1 respondent unequivocally thought CON for hospital beds improved quality while another was equally certain CON potentially could put quality at risk by giving hospitals a franchise and shielding them from the quality-enhancing effects of competition.

Literature Review: CON for Hospital Beds and Quality

The literature on the impact of CON on general hospital quality was reviewed in Section IV. We did not locate any additional literature that focused on quality and hospital beds.

IMPACT OF CON FOR BEDS ON ACCESS

Key Informant Survey

Our survey included two questions related to access, the first focusing on whether CON affects access for uninsured and disadvantaged populations and the second related to geographic access for the entire population.

Impact on Access to Hospital Care for Uninsured/Disadvantaged. Seven respondents said CON had no effect on access to the uninsured or disadvantaged populations. One explained that federal law (EMTALA) requires all hospitals to accept any patients via their ER regardless of ability to pay, so that CON was not needed to perform this function. The other 5 respondents thought CON did improve such access principally by preventing large urban facilities from fleeing to the suburbs. However, one who acknowledged this contribution of CON also worried about the long-term viability of these facilities since CON's two-mile rule prevented them from creating satellite facilities to meet local market conditions.

Impact on Geographic Access. Seven respondents thought CON had no effect on geographic access; 3 of these noted that since there already are too many beds everywhere, geographic access really was not an issue in the state, while another 2 thought that CON's impact on geographic distribution was limited to technologies such as MRIs but not beds. Two others thought that CON resulted in there being too many beds in urban areas and too few in suburbs, which was viewed as not helpful. None of the respondents thought that CON had an adverse effect on access in rural areas.

Among those who believed that CON had a positive effect on geographic access, 1 thought that access would be worse in urban areas without CON, but that there were sufficient beds in rural areas even with CON; another had the identical view with respect to both urban and rural areas.

Literature Review: CON for Hospital Beds and Access

In addition to the literature cited in Section IV regarding CON and general access to acute care facilities, we found only one study that specifically addressed whether CON for hospital beds had an impact on access. This study found that hospitals in states with mature CON programs had a decrease in "reserve margins" (i.e., higher occupancy rates), which was interpreted to mean a diminution of quality since higher occupancy rates increase the chance that a sick patient will be turned away due to lack of available beds (Joskow 1980). This work has been updated by Graham and Cowing (1997); they also found that duration of state CON had a negative and statistically significant effect on hospital reserve margins. However, this is very indirect evidence of a potential adverse effect of CON on quality and the size of the added risk created by higher occupancy rates is relatively small. In the context of the low occupancy rates in Michigan, it probably has no relevance.

IMPACT OF CON FOR HOSPITAL BEDS ON EQUITY

Key Informant Survey

Two respondents thought that the current CON process for hospital beds was fair, although one of these noted that very recently, the legislature has attempted to get more involved resulting in some ad hoc decisions that raise questions about fairness. The system used to be very political, but the revised system that was based more on very explicit standards and ad hoc committees that are well balanced took decisions out of the hands of legislators: until recently, the legislature has not attempted to meddle in the CON process. Two others felt this was hard to determine; one of these thought the rules were very complex so facilities often are uncertain of how to proceed (e.g., what's covered as a "single project" etc.), while the other characterized the old CON system as definitely a "good old boy" network and one in which persistent facilities could always win on appeal because there were no clear standards. So the state shifted to an "all numbers" approach in the mid-1980's, which worked reasonably well until the arrival of a Republican governor who did not like CON and who installed deputies who felt the same way. The result has been a return to a less level playing field in which those with political connections get what they want. The most blatant example was the situation regarding Metropolitan Hospital which was able to get an exemption to standard requirement that hospitals could not relocate more than 2 miles from their current site. Conversely, the politics of SE Michigan have unfairly prevented the expansion of Beaumont Hospital.

Another said the system was procedurally fair—i.e., decisions were made according to the clearly enunciated standards—but that those with deep pockets of necessity have an advantage because they have more wherewithal to find ways to show they meet the standards and because they are better represented in ad hoc committee process etc. Another voiced similar sentiments noting that neophytes are at a disadvantage given the complexity of the process, but this individual also noted that small facilities often are assisted by skilled consultants so there is not a general bias in the current system that works to their disadvantage. Three others echoed this view but characterized the larger teaching hospitals as the ones who knew best how to "play the game" (one framed this as "manipulate the system") and hence had some advantage. Another thought that it was hospitals in general rather than any particular type of facility that was favored in the current process. However, this view was contradicted by another who claimed that on the outpatient side, CON served as a franchise creator, creating an interest group that prevents others from getting in later on. Echoing this, another felt that the unfairness of CON was evidenced far more for technologies such as MRI; in contrast, the issue of fairness on the inpatient side currently was irrelevant insofar as hospitals know they cannot get approval for new beds, so they do not even bother trying. However, this individual felt that in another 15 years, this would create serious problems. Since not too many hospitals replace their entire facility, current rules

prevent an old urban hospital from emerging as a new suburban hospital. But eventually, the need for beds in suburbs will be so great that new facilities will be built, resulting in even more unused urban beds.

Literature Review: CON for Hospital Beds and Equity

We could locate no literature that specifically addressed whether CON for hospital beds had an impact on equity, although the previous evidence cited in the acute care CON section relating to CON's impact on favoring certain types of facilities over others has some relevance.

CON FOR HOSPITAL BEDS: MEND IT OR END IT?

Potential Improvements in CON for Hospital Beds

The key informants provided a number of suggestions regarding improvement, some of which have already been discussed in the acute care CON section. Of the remaining recommendations that relate exclusively to CON review of hospital beds, the ones cited by the most respondents or which appear to be the most important in terms of improving the process without diminishing its effectiveness are as follows:

- *Fix Bed Need Methodology.* There were several suggestions for changing the bed need methodology. One characterized the current method as “horribly flawed” as it relies on use patterns from 1970's and 1980's and old technology; a companion problem is that population data are not kept up to date. As a consequence, CON can never get the number and distribution of beds right. Another respondent noted that the current system was based entirely on licensed rather than filled beds, which inaccurately reflects currently available capacity. The system allows hospitals with many empty beds to block successful facilities with too few beds to block expansion of these latter facilities. The current rule is that licensed beds must be able to be set up within 24 hours, but it costs very little for hospitals to retain such beds on their books by, for example, being able to convert single hospital rooms into doubles, etc. A third respondent said that current need standards look at use rates in the local area and state and use whichever is lower. However, this does not account for higher utilization rates among the poor, for example.
- *Allow More Flexibility.* Everyone concedes most areas are overbedded. A committee now is working on fixing the hospital groups that were set in the late 1970's. The system will not work if hospitals are permitted to move willy-nilly (e.g., Metropolitan Hospital), so something needs to be done about the replacement zone issue, i.e., perhaps relaxing the 2-mile requirement. This view was echoed by another respondent who thought that allowing health systems to move beds between any of their hospitals within a sub-area without approval would be an improvement (this recommendation would only apply to inpatient-to-inpatient bed transfers, i.e., it would

not permit conversion of inpatient beds to outpatient facilities such as ambulatory surgical centers).

- *Take Excess Capacity Offline.* Two respondents thought there needed to be some mechanism to de-license unused beds (one respondent noted that from the standpoint of cost savings, it would be better to close entire facilities rather than close selected beds within facilities). Current thresholds to retain a CON are set too low, allowing facilities with very low occupancies to keep their beds.

Elimination of CON for Hospital Beds

In our key informant interviews, most (75%) favored retaining CON for hospital beds rather than eliminating it.

CON vs. Market Forces. Nine respondents preferred CON; one of these explicitly acknowledged that the current CON system was not particularly effective, but claimed that even this was preferable to a completely free market (this was echoed by another who preferred CON “warts and all” over market forces that would encourage more for-profit activity. Another noted that if Medicaid reimbursed fairly, there might not even be a need for CON. Another said that because patients must rely on expert advice that is not always altruistically motivated, the market does not work in health care; to support this view, the respondent noted that GM had compared its per member costs across states with and without CON and found them lower in Michigan and New York (states with CON) compared to California and Indiana (states that dropped CON). Another pointed to the ability of hospitals to borrow at below prime rate (because they are not-for-profit) and the fact that patients do not have to pay full freight as conditions that precluded effective operation of the market.

Three respondents preferred market forces. One of these felt that “enlightened regulation” is OK at the local level to shape the direction of the delivery system, but today purchasers have taken over and largely eliminated cost-based reimbursement, so there is little danger in an explosion in inpatient services if CON were lifted.

Immediate vs. Gradual Removal of CON. Two respondents could not or would not indicate whether immediate removal of CON was preferable to a phased out approach. Of those responding, 6 (60%) preferred immediate removal and 4 favored a more phased approach, typically 3 years or so. Those favoring immediate withdrawal offered several reasons: a) because it was difficult to imagine a fair way of doing so gradually; b) because the demand for services that CON has artificially suppressed has grown to acute levels in some areas; c) because the same politics that now surround the program would plague a gradual phaseout as well; and d) to return to a level playing field as soon as possible.

Several of those arguing for a more gradual phaseout typically wanted a chance for decision makers to reverse this decision if it turned out to produce undesirable results while another said that it was better to go slow since otherwise some players would take advantage of the system. The only concrete suggestion for how such a phaseout could be done would be to do so geographically while monitoring what occurred.

Risks Associated with Immediate Removal of CON. Two respondents saw no risks associated with immediate phaseout of CON (except for long term care, which was not the focus of questioning). These individuals indicated that the market could be counted on to constrain excess growth. One acknowledged that there might be an explosion in use of certain technologies such as MRI/CT scans, but this might be justified (this individual noted that for most products, consumers are not forced to get up in the middle of the night to make use of them). Another acknowledged the risks of “land rush” development that would siphon capital away from certain areas, but was comfortable with letting this shake out in the market.

The various risks associated with immediate withdrawal were variously described by respondents as follows: a) there would be overbuilding of new facilities in the Detroit area, with subsequent adverse consequences on inner city hospitals that now are financially healthy, along with access problems for the indigent and elderly; b) there would be a proliferation of facilities (e.g., boutique open heart clinics) with questionable quality and/or unnecessary services provided (and companion reduction in volume of procedures for existing providers); c) an influx of for-profit providers who would cream-skin paying patients from facilities with high uncompensated care loads.

One respondent cautioned that if the state were to move in the direction of removing CON, it needed to be consistent in its approach to the health care market, e.g., by removing favorable state financing for hospital loans and letting them compete for capital on a level playing field and not tying the hands of the market with any-willing-provider laws and insurance mandates etc.

CONCLUSIONS

The Center concludes that the weight of the available evidence provides weak support for continuing CON for hospital beds. The empirical evidence regarding CON's impact on costs/availability of hospital beds provides little reason to believe that lifting restrictions on beds would result in a surge in building of new facilities. Indeed, our multivariate analysis suggested that lifting CON reduces the number of beds, although the effect is quite small.

With respect to *quality*, neither the key informant interviews nor literature suggest that CON for beds per se affects quality. To the degree there are concerns about volume and quality, these could be addressed by continuing CON regulation of selected facilities (e.g., open heart units) rather than hospital facilities in general.

The strongest case for continuing CON for hospital beds relates to access. As noted in the preceding section, it is an open question whether removal of CON would produce the two-tiered system many fear, with hospitals fleeing the inner cities to relocate in the suburbs jeopardizing access to care for selected populations and/or financial health of hospitals that remain.

Thus, whether to continue CON for hospital beds comes down to a trade-off: is it worth inconveniencing an uncertain number of residents living predominantly in suburbs in order to achieve relatively modest improvements (if any) in access? If CON for beds is continued, the following improvements merit consideration: a) fix bed need methodology so that it is based on more current data; b) increase flexibility by permitting transfers of beds within hospital systems; and c) develop a mechanism to take excess capacity offline.

The following section reviews the Center's findings regarding CON for cardiac services.

